

PI Simard JUl, Diamond DC, Liu L, Xie Z;  
XX  
XX WPI; 2003-067518/06.  
XX  
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
XX Claim 1; Page 19; 352pp; English.  
XX  
CC The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX  
SQ Sequence 28 AA;  
XX  
Alignment Scores:  
Pred. No.: 6.43 Length: 28  
Score: 28.00 Matches: 28  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 15.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74370 (1-28)  
QY 459 CGACTGACTGCTGAGACCGCAGCTGCTCCATCAGCTCTGCTCCAGAG 518  
Db 1 ArgLeuThrAlaAlaAspHisArgGlnLeuGlnLeuSerCysLeuGlnGln 20  
QY 519 CTTTCCTGTTGATGGATCAGG 542  
Db 21 LeuSerLeuLeuMetTrpIleThr 28  
XX  
RESULT 16  
ABP74371  
ID ABP74371 standard; peptide; 28 AA.  
XX  
AC ABP74371;  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:255.  
XX  
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX  
XX Homo sapiens.  
XX  
XX OS  
XX PN WO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX

PI Simard JUl, Diamond DC, Liu L, Xie Z;  
XX  
XX WPI; 2003-067518/06.  
XX  
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
XX Claim 1; Page 19; 352pp; English.  
XX  
CC The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX  
SQ Sequence 28 AA;  
XX  
Alignment Scores:  
Pred. No.: 6.43 Length: 28  
Score: 28.00 Matches: 28  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 15.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74371 (1-28)  
QY 501 AGCCCTGCTCCAGAGCTTTCCCTGTTGATGGATCAGGAGTCTTTGCCCCGTG 560  
Db 1 SerSerCysLeuGlnGlnLeuSerLeuLeuMetTrpIleThrGlnCysPheLeuProVal 20  
QY 561 TTTTGGCTCAGGCTCCCTCAGGG 584  
Db 21 PheLeuAlaGlnProProSerGly 28  
XX  
RESULT 17  
ADC09230  
ID ADC09230 standard; peptide; 28 AA.  
XX  
AC ADC09230;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 255.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX OS  
XX PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX

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XX Simard JTL, Diamond DC, Liu L, Xie Z;
PI
XX WPI, 2003-248010/24.
DR
XX
XX Eptitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
XX Claim 1; SEQ ID NO 255; 239pp; English.
XX
XX The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 28 AA;
Alignment Scores:
Pred. No.: 6.43 Length: 28
Score: 28.00 Matches: 28
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 15.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ADC09230 (1-28)
QY 501 AGCTCTGTCTCCAGACGCTTCCCTGTGATGATGATCAGCAGTGCTTCTGCGCGTG 560
Db |||||
1 SerSerCysLeuGlnGlnLeuSerLeuMetTrpIleThrGlnCysPheLeuProVal 20
QY 561 TTTTGGCTCAGAGCTTCCCTCAGGG 584
Db |||||
21 PheLeuAlaGlnProProSerCyl 28
RESULT 18
ADC09229
ID ADC09229 standard; peptide; 28 AA.
XX
XX ADC09229;
AC
XX
XX 18-DEC-2003 (first entry)
DT
XX
XX Eptitope with high affinity for MHC class I #SEQ ID 254.
DE
XX
XX Eptitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
XX Unidentified.
OS
XX
XX WO2003008537-A2.
FN
XX
XX 30-JAN-2003.
PD
XX
XX 29-MAR-2002; 2002WO-US010189.
PF
XX
XX 06-APR-2001; 2001US-028221P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.
PA
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XX Simard JTL, Diamond DC, Liu L, Xie Z;
PI
XX WPI, 2003-248010/24.
DR
XX
XX Eptitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
XX Claim 1; SEQ ID NO 254; 239pp; English.
XX
XX The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC -peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 28 AA;
Alignment Scores:
Pred. No.: 6.43 Length: 28
Score: 28.00 Matches: 28
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 15.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ADC09229 (1-28)
QY 459 CGACTGACTGCTGCGACACCGCCCACTGAGCTTCATCAGCTCCTGTCTCAGCAG 518
Db |||||
1 ArgLeuThrAlaAlaAlaPheHisArgGlnLeuGlnLeuSerIleSerCysLeuGlnGln 20
QY 519 CTTTCCCTGTGATGATGATCAG 542
Db |||||
21 LeuSerLeuLeuMetTrpIleThr 28
RESULT 19
AAE07757
ID AAE07757 standard; peptide; 27 AA.
XX
XX AAE07757;
AC
XX
XX 06-NOV-2001 (first entry)
DT
XX
XX Human HLA-DP restricted T cell epitope #2 of NY ESO-1 protein.
DE
XX
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
XX Homo sapiens.
OS
XX
XX WO200155393-A2.
FN
XX
XX 02-AUG-2001.
PD
XX
XX 26-JAN-2001; 2001WO-US002765.
PF
XX
XX 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
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XX 02-AUG-2001.
XX
XX 26-JAN-2001; 2001WO-US002765.
XX
XX 28-JAN-2000; 2000US-0179004P.
XX
XX 29-SEP-2000; 2000US-0237107P.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Wang R, Rosenberg SA, Zeng G;
XX WPI; 2001-496851/54.
XX
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
XX useful as immunogen and vaccine for inhibiting cancer in a mammal or as
XX protection from metastasis.
XX
XX Claim 4; Page 16; 134pp; English.
XX
XX The invention relates to the identification and isolation of major
XX histocompatibility (MHC) class II restricted T cell epitope (MHC-II
XX epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
XX from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
XX antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
XX restricted. The products of the gene are promising candidates for
XX immunotherapeutic strategies for the prevention, treatment and diagnosis
XX of patients with cancer. The cancer epitopes are useful as immunogen and
XX vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
XX lymphocytes resulting in protection of the recipient from development of
XX cancer and protection from metastasis, or by inhibiting the growth of
XX cells expressing the NY-ESO-1 gene product. The cancer peptides are also
XX useful as diagnostic agent to detect the presence of cancer, to enhance
XX the generation of antibody and/or CD8+ T cell responses against any given
XX target antigen and/or hapten and to induce tumour-specific humoral-
XX mediated immunity against cancer. The present sequence is MHC class II
XX restricted T cell epitope of human NY ESO-1 protein
XX
XX SQ Sequence 25 AA;
XX
XX Alignment Scores:
XX Pred. No.: 11.8 Length: 25
XX Score: 25.00 Matches: 25
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 13.89% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAE07718 (1-25)
XX
XX QY 390 GCCCCACCGCTTCCGTCGCAAGGGGCTTCTGAAGAGTTCACTGTGCCGCAACATA 449
XX |||||
XX Db 1 AAlProPoleuProvalProGlyValLeuLeuylsgluPhetThrValSerGlyYsnlle 20
XX |||||
XX QY 450 CTGACTATCCGACCTG 464
XX |||||
XX Db 21 LeuThrIleArgLeu 25
XX |||||
XX
XX RESULT 22
XX ID ADD71521 standard; peptide; 25 AA.
XX
XX AC ADD71521;
XX
XX 15-JAN-2004 (first entry)
XX
XX DB HLA-DP4 binding peptide ligand #83.
XX
XX cytosolic; immunostimulant; immunosuppressive; neuroprotective;
XX antidiabetic; antiallergic; ligand; HLA-DP4; human leukocyte antigen;
XX immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
XX diabetes; allergy; graft rejection.
XX

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OS Synthetic.
XX
XX FR2830940-A1.
XX
XX 18-APR-2003.
XX
XX 17-OCT-2001; 2001FR-00013352.
XX
XX 17-OCT-2001; 2001FR-00013352.
XX
XX 17-OCT-2001; 2001FR-00013352.
XX
XX (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.
XX (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
XX Mailleere B, Castelli F, Buhot C, Georges B;
XX WPI; 2003-395920/38.
XX
XX Process for selecting ligands for human leukocyte antigen DP4, useful as
XX immunomodulators for treating e.g. tumors, based on inhibition of
XX binding.
XX
XX Disclosure; SEQ ID NO 83; 70pp; French.
XX
XX The invention relates to a process for selecting ligands (A) of HLA
XX (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4
XX with a labelled peptide (1) in presence of different concentrations of
XX test compounds; (b) separating complexes formed; (c) determining DP4-(1)
XX complexes by measuring a signal from the label; and (d) selecting
XX compounds having binding IC50 less than 1000 nM, corresponding to the
XX concentration required to inhibit 50 % binding of (1). (1) has signal-to-
XX noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause
XX activation of T cells, or their anergy. (A), or nucleic acid that encodes
XX them, are useful as immunomodulators, including uses in vaccines against
XX pathogens and tumor cells, also for treating autoimmune diseases
XX (multiple sclerosis and type I diabetes), allergy and graft rejection.
XX (A) are useful as reagents for diagnosing the immune status of an
XX individual, while labelled complexes of DP4 with (A) are used to select
XX antigen-specific CD4+ T cells. The method identifies ligands specific for
XX HLA-DP4 and allows exact definition of the binding motif shared by DP4
XX binding ligands. This sequence represents an example of a peptide ligand
XX of the invention. The peptides are labelled (biotinylated) at their N-
XX terminl.
XX
XX SQ Sequence 25 AA;
XX
XX Alignment Scores:
XX Pred. No.: 11.8 Length: 25
XX Score: 25.00 Matches: 25
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 13.89% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ADD71521 (1-25)
XX
XX QY 408 CCAGGGGTGCTTCTGAAGAGTTCACTGTCCGGCAACAACTACTGACCTGACT 467
XX |||||
XX Db 1 ProGlyValLeuLeuylsgluPhetThrValSerGlyYsnlleLeuThrIleArgLeuThr 20
XX |||||
XX QY 468 GCTGCAGACCAACGCC 482
XX |||||
XX Db 21 AlaAlaAspHisArg 25
XX |||||
XX
XX RESULT 23
XX ID ADD71522 standard; peptide; 25 AA.
XX
XX AC ADD71522;
XX
XX 15-JAN-2004 (first entry)
XX
XX DB HLA-DP4 binding peptide ligand #84.
XX

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|           |  |
|-----------|--|
| KW        | Cytostatic; immunosuppressant; immunosuppressive; neuroprotective;           |
| KM        | anti-diabetic; anti-allergic; ligand; HLA-DP4; human leukocyte antigen;      |
| KV        | immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;          |
| KW        | diabetes; allergy; graft rejection.  |
| XX        |  |
| OS        | Synthetic.   |
| PN        | FR2830940-A1.  |
| XX        |  |
| PD        | 18-APR-2003.   |
| XX        |  |
| PF        | 17-OCT-2001; 2001FR-00013352.  |
| XX        |  |
| PR        | 17-OCT-2001; 2001FR-00013352.  |
| PA        | (COMS ) COMMISSARIAAT ENERGIE ATOMIQUE.                                      |
| PA        | (SEDAC ) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.                           |
| XX        |  |
| PI        | Mallere B, Castelli F, Buhot C, Georges B;                                   |
| DR        | WPI; 2003-395920/38.   |
| XX        |  |
| PT        | Process for selecting ligands for human leukocyte antigen DP4, useful as     |
| PI        | immunomodulators for treating e.g. tumors, based on inhibition of            |
| XX        | binding.   |
| PS        | Claim 14; SEQ ID NO 84; 70pp; French.  |
| CC        | The invention relates to a process for selecting ligands (A) of HLA          |
| CC        | (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4        |
| CC        | with a labelled peptide (I) in presence of different concentrations of       |
| CC        | test compounds; (b) separating complexes formed; (c) determining DP4-(I)     |
| CC        | complexes by measuring a signal from the label; and (d) selecting CC         |
| CC        | compounds having binding IC50 less than 1000 nM, corresponding to the        |
| CC        | concentration required to inhibit 50 % binding of (I). (I) has signal-to-    |
| CC        | noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause     |
| CC        | activation of T cells, or their anergy. (A), or nucleic acid that encodes    |
| CC        | them, are useful as immunomodulators, including uses in vaccines against     |
| CC        | pathogens and tumor cells, also for treating autoimmune diseases             |
| CC        | (multiple sclerosis and type I diabetes), allergy and graft rejection.       |
| CC        | (A) are useful as reagents for diagnosing the immune status of an            |
| CC        | individual, while labelled complexes of DP4 with (A) are used to select      |
| CC        | antigen-specific CD4+ T cells. The method identifies ligands specific for    |
| CC        | HLA-DP4 and allows exact definition of the binding motif shared by DP4       |
| CC        | binding ligands. This sequence represents an example of a peptide ligand     |
| CC        | of the invention. The peptides are labelled (biotinylated) at their N-       |
| CC        | -termini.  |
| XX        |  |
| XX        | Sequence 25 AA:  |
| XX        |  |
| XX        | Alignment Scores:  |
| XX        |  |
| XX        | Pred. No.:                11.8                length:               25       |
| XX        | Score:                        25.00                Matches:               25 |
| XX        | Percent Similarity:          100.00%             Conservative:          0    |
| XX        | Best Local Similarity:       100.00%             Mismatched:           0     |
| XX        | Query Match:                  13.89%             Indels:                0    |
| XX        | Dbl:                           1                 Gaps:                  0    |
| XX        |  |
| XX        | US-10-023-182-1 (1-752) x ADD71522 (1-25)                                    |
| OY        | 312 CTGTGGATTACTCGGCATGCCCTTTCGAGACACCATGAAGCAGTGCCCGC 371                   |
| Db        | 1 LLEULEUGLUPHETYLEUALAKETPPHEALATHNPROMECTUNLAGULUEUAAIARY 20               |
| OY        | 372 AGGAGCCTGGCCCCAG 386   |
| Db        | 21 ARGSEPLEUALLGIN 25  |
| RESULT 24 |  |
| ID        | ADD71532 standard; peptide, 25 AA.   |
| NC        | ADD71532;  |

[illegible]





|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 30.8    | Length:       | 20 |
| Score:                 | 20.00   | Matches:      | 2  |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 11.1%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) X AAE07744 (1-20)

Qy 519 CTTTCCTGATTGATGTGATACGCAGTGTCTTCTTGCCCGTCTTTTTGGCTCAGCCCTCCC 578  
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  
Db 1 LeuSerLeuMetTrpIleThrGlnCysPheLeuProValPheLeuAlaGlnProPro 20

## RESULT 29

ID AAE07746 standard; peptide; 20 AA.

AC AAE07746;

DT 06-NOV-2001 (first entry)

DE Human ESO p111-130 peptide to generate CD4+T cells specific for NY ESO-1.

KM Human, major histocompatibility complex; MHC; vaccine; metastasis;  
KM class II restricted T cell epitope; MHC-II epitope; cancer antigen  
KM NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KM tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KM immunotherapy.

OS Homo sapiens.

PN W0200155393-A2.

PD 02-AUG-2001.

PF 26-JAN-2001; 2001WO-US002765.

PR 28-JAN-2000; 2000US-0179004P.

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XXXXXX
































PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as

XX

The invention relates to the identification and isolation of major histocompatibility (MHC) class II restricted T cell epitope (MHC-II epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte antigen (HLA) class II restricted manner, in particular HLA-DK or HLA-DP restricted. The products of the gene are promising candidates for immunotherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T lymphocytes resulting in protection of the recipient from development of cancer and protection from metastasis, or by inhibiting the growth of cells expressing the NY-ESO-1 gene product. The cancer peptides are also useful as diagnostic agent to detect the presence of cancer, to enhance the generation of antibody and/or CD8+ T cell responses against any given target antigen and/or hapten and to induce tumour-specific humoral- and/or cellular-mediated immunity against cancer. The present sequence is human ESO p111-130 peptide used in the generation of human CD4+T cells specific for NY ESO-1 protein

**SQ** Sequence 20 AA;

### Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 30.8    | Length:       | 20 |
| Score:                 | 20.0    | Matches:      | 25 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 11.11%  | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAE07746 (1-20)

QY 384 CAGGATGCCCCACCCGCTTCCCGTCCAGGGGCTTTCTGAAGAGCTTCACTGTGTCCGGC 443

### RESULT 30

ID AAE07743 standard; peptide; 20 AA.

AC AAE07743 ;

DT 06-NOV-2001 (first entry)

DE Human ESO p131-150 peptide, to identify MHC class II-restricted epitopes.

KM Human: major histocompatibility complex; MHC, vaccine; metaanalysis  
KM Class II restricted T cell epitope; MHC-II epitope; cancer antigen  
KM NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA,  
KM tumour-specific humoral-mediated immunity; cancer; cytotoxic;  
KM immunotherapy.

OS Homo sapiens.

PN W0200155393-A2.

PD 02-AUG-2001

PF 26-JAN-2001; 2001WO-US002765.

PR 28-JAN-2000; 2000US-0179004P.

XX

XX

XX

XX

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as

XX

The invention relates to the identification and isolation of major histocompatibility (MHC) class II restricted T cell epitope (MHC-II epitopes) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte antigen (HLA) class II restricted manner. In particular HLA-DR or HLA-DP restricted. The products of the gene are promising candidates for immunotherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T lymphocytes resulting in protection of the recipient from development of cancer and protection from metastasis, or by inhibiting the growth of cells expressing the NY-ESO-1 gene product. The cancer peptides are also useful as diagnostic agent to detect the presence of cancer, to enhance the generation of antibody and/or CD4+ T cell responses against any given target antigen and/or hapten and to induce tumour-specific humoral-mediated immunity against cancer. The present sequence is human ESO 150 peptide used in the identification of putative MHC Class II - restricted epitopes from HLA-DR4-transgenic mice

**SQ** Sequence 20 AA;

Alignment Scores:  
Pred. No.: 30.8 Length: 20  
Score: 20.00 Matches: 20  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 11.11% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07743 (1-20)

Oy 444 AACATAGTACTGATCCGAGTCTGCTGACAGCCAGCCGAATGACAGCTTCATCAGC 503  
|||||  
Db 1 AsnIleuThrIleArgLeuThrAlaIaAspHisArgIleuGlnLeuSerIleSer 20

RESULT 31  
AAE07731  
ID AAE07731 standard; peptide; 20 AA.  
XX  
AC AAE07731;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #17.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 4; Fig 3; 134p; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope (ESO p141-160) of human NY ESO-1 protein  
XX  
SQ Sequence 20 AA;

Alignment Scores:  
Pred. No.: 30.8 Length: 20  
Score: 20.00 Matches: 20  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 11.11% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07731 (1-20)

Oy 474 GACCACGCCAATCGAGTCTTCATCAGCTCTGTCGACAGCTTTCCCTGTATG 533  
|||||  
Db 1 AspHisArgIleuGlnLeuSerIleSerCysIleuGlnIleuSerIleuMet 20

RESULT 32  
AAE07729  
ID AAE07729 standard; peptide; 20 AA.  
XX  
AC AAE07729;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #15.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 4; Fig 3; 134p; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope (ESO p116-135) of human NY ESO-1 protein  
XX  
SQ Sequence 20 AA;

| Alignment Scores:      | 30.8    | Length:       | 20 |
|------------------------|---------|---------------|----|
| Pred. No.:             | 20.00   | Matches:      | 20 |
| Score:                 | 100.00* | Conservative: | 0  |
| Percent Similarity:    | 100.00* | Mismatches:   | 0  |
| Best Local Similarity: | 100.00* | Indels:       | 0  |
| Query Match:           | 11.11*  | Gaps:         | 0  |
| DB:                    | 1       |               |    |

US-10-023-182-1 (1-752) x AAE07729 (1-20)

QY 399 CTTCCCGTGCAGGSGGCTTCTGAAGAGTTCACTGTGTCGGCAACATACGACTATC 458  
 Db 1 LeuProValaProGlyValleuLeuYsgIupheThraValserGlyAseuileuThrile 20

RESULT 33

AAE07742  
 ID AAE07742 standard; peptide, 20 AA.

AAE07742;  
 AC  
 XX  
 XX  
 DT 06-NOV-2001 (first entry)  
 XX  
 XX Human ESO p126-145 peptide, to identify MHC class II-restricted epitopes.  
 DE Human ESO p126-145 peptide, to identify MHC class II-restricted epitopes.  
 XX  
 XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
 KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
 KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
 KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
 KW immunotherapy.  
 XX  
 XX Homo sapiens.  
 OS  
 XX  
 XX WO200155393-A2.  
 PN  
 XX  
 XX 02-AUG-2001.  
 PD  
 XX  
 XX 26-JAN-2001; 2001WO-US002765.  
 PF  
 XX  
 XX 28-JAN-2000; 2000US-0179004P.  
 PR  
 XX  
 XX 29-SEP-2000; 2000US-0237107P.  
 ER  
 XX  
 XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 PA  
 XX  
 XX Wang R, Rosenberg SA, Zeng G;  
 PI  
 XX WPI: 2001-496851/54.  
 DR  
 XX  
 XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
 PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
 PT protection from metastasis.  
 PT  
 XX  
 XX Example 3; Fig 3; 134pp; English.  
 PS  
 XX  
 XX The invention relates to the identification and isolation of major  
 CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
 CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
 CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
 CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
 CC restricted. The products of the gene are promising candidates for  
 CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
 CC of patients with cancer. The cancer epitopes are useful as immunogen and  
 CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
 CC lymphocytes resulting in protection of the recipient from development of  
 CC cancer and protection from metastasis, or by inhibiting the growth of  
 CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
 CC useful as diagnostic antibody to detect the presence of cancer, to enhance  
 CC the generation of antibody and/or CD8+ T cell responses against any given  
 CC target antigen and/or hapten and to induce tumour-specific humoral-  
 CC mediated immunity against cancer. The present sequence is human ESO p126-  
 CC 145 peptide used in the identification of putative MHC class II -  
 CC restricted epitopes from HLA-DR-transgenic mice

|    |   |  |                 |    |
|----|---|--|-----------------|----|
| 50 | Sequence  | 20 AA;   |                 |    |
|    | Alignment Scores:   |  |                 |    |
|    | Pred. No.:  | 30.8   | Length:         | 20 |
|    | Score:  | 20.00  | Matches:        | 20 |
|    | Percent Similarity:   | 100.00%  | Conservative:   | 0  |
|    | Best Local Similarity:  | 100.00%  | Mismatches:     | 0  |
|    | Query Match:  | 11.11%   | Indels:         | 0  |
|    | DB:   | 1  | Gaps:           | 0  |
|    | US-10-023-182-1 (1-752)   | x  | AAE07742 (1-20) |    |
| Qy | 429   | TTCACTGTGTCGGCAGACATACCTAGTATCCGACTGCTGCAGACCCGCAACTG    | 488             |    |
| Db | 1   | PhenrValserGlyAenIleuThrIleargLeuThrAlaIleAspIstargInteu | 20              |    |
|    | RESULT 34   |  |                 |    |
|    | AAE07747  |  |                 |    |
| ID | AAE07747  | standard; peptide; 20 AA.                                |                 |    |
| AC | AAE07747;   |  |                 |    |
| XX |   |  |                 |    |
| XX | 06-NOV-2001   | (first entry)  |                 |    |
| DE |   |  |                 |    |
| XX | Human ESO p91-110 peptide to generate CD4+T cells specific for NY ESO-1.  |  |                 |    |
| KW | Human; major histocompatibility complex; MHC; vaccine; metastasis;        |  |                 |    |
| KW | class II restricted T cell epitope; MHC-II epitope; cancer antigen;       |  |                 |    |
| KW | NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;        |  |                 |    |
| KW | tumour-specific humoral-mediated immunity; cancer; cytostatic;            |  |                 |    |
| KW | immunotherapy.  |  |                 |    |
| XX |   |  |                 |    |
| OS | Homo sapiens.   |  |                 |    |
| XX |   |  |                 |    |
| PN | WO20015393-A2.  |  |                 |    |
| PD |   |  |                 |    |
| XX | 02-AUG-2001.  |  |                 |    |
| XX |   |  |                 |    |
| PF | 26-JAN-2001; 2001WO-US002765.   |  |                 |    |
| XX |   |  |                 |    |
| PR | 28-JAN-2000; 2000US-0179004P.   |  |                 |    |
| XX |   |  |                 |    |
| PR | 29-SEP-2000; 2000US-0237107P.   |  |                 |    |
| XX |   |  |                 |    |
| PA | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |  |                 |    |
| XX |   |  |                 |    |
| PI | Wang R, Rosenberg SA, Zeng G;   |  |                 |    |
| XX |   |  |                 |    |
| DR | WPI; 2001-496851/54.  |  |                 |    |
| XX |   |  |                 |    |
| PT | New NY-ESO cancer peptide or MHC class II restricted T cell epitopes;     |  |                 |    |
| XX | useful as immunogen and vaccine for inhibiting cancer in a mammal or as   |  |                 |    |
| PT | protection from metastasis.   |  |                 |    |
| XX |   |  |                 |    |
| XX |   |  |                 |    |
| PS | Example 4; Fig 4B; 134bp; English.  |  |                 |    |
| XX |   |  |                 |    |
| CC | The invention relates to the identification and isolation of major        |  |                 |    |
| CC | histocompatibility (MHC) class II restricted T cell epitope (MHC-II       |  |                 |    |
| CC | epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes   |  |                 |    |
| CC | from NY ESO-1 are recognised by CD4+ T lymphocytes in a human leucocyte   |  |                 |    |
| CC | antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  |  |                 |    |
| CC | restricted. The products of the gene are promising candidates for         |  |                 |    |
| CC | immunotherapeutic strategies for the prevention, treatment and diagnosis  |  |                 |    |
| CC | of patients with cancer. The cancer epitopes are useful as immunogen and  |  |                 |    |
| CC | vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T   |  |                 |    |
| CC | lymphocytes resulting in protection of the recipient from development of  |  |                 |    |
| CC | cancer and protection from metastasis, or by inhibiting the growth of     |  |                 |    |
| CC | cells expressing the NY-ESO-1 gene product. The cancer peptides are also  |  |                 |    |
| CC | useful as diagnostic agent to detect the presence of cancer, to enhance   |  |                 |    |
| CC | the generation of antibody and/or CD4+ T cell responses against any given |  |                 |    |
| CC | target antigen and/or happen and to induce tumour-specific humoral        |  |                 |    |
| CC | mediated immunity against cancer. The present sequence is human ESO p91-  |  |                 |    |
| CC | 110 peptide used in the generation of human CD4+T cells specific for NY   |  |                 |    |
| CC | ESO-1 protein   |  |                 |    |

```
XX SQ Sequence 20 AA;
Alignment Scores:
Pred. No.: 30.8
Score: 20.00
Percent Similarity: 100.00%
Best Local Similarity: 100.00%
Query Match: 11.11%
DB: 1
Gaps: 0

US-10-023-182-1 (1-752) x AAE07747 (1-20)
OY 324 TACCTCGCATGCTTTCGAGACCAATGAGAGAGCTGCGCCGAGAGCTGACC 383
Db 1 TyndalshetPromeIatnPrometSlnaGluLeuAlaArgArgSerIeudAla 20

RESULT 35
AAE07741
ID AAE07741 standard; peptide: 20 AA.
AC AAE07741;
XX
XX 06-NOV-2001 (first entry)
DT
XX
XX Human ESO p82-101 peptide, to identify MHC class II-restricted epitopes.
DE
XX
XX Human, major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
XX Homo sapiens.
OS
XX
XX WO200155393-A2.
PN
XX
XX 02-AUG-2001.
PD
XX
XX 26-JAN-2001; 2001WO-US002765.
PF
XX
XX 28-JAN-2000; 2000US-0179004P.
PR
XX 29-SEP-2000; 2000US-0237107P.
PR
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA
XX
XX Wang R, Rosenberg SA, Zeng G;
PI
XX
XX WPI; 2001-496851/54.
DR
XX
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
XX
XX Example 3; Fig 3; 134pp; English.
PS
XX
XX The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human ESO p82-
CC 101 peptide used in the identification of putative MHC class II -
```

```
CC restricted epitopes from HLA-DR4-transgenic mice
XX
XX SQ Sequence 20 AA;
Alignment Scores:
Pred. No.: 30.8
Score: 20.00
Percent Similarity: 100.00%
Best Local Similarity: 100.00%
Query Match: 11.11%
DB: 1
Gaps: 0

US-10-023-182-1 (1-752) x AAE07741 (1-20)
OY 294 AGGGGCGCGAGAGCGCGCTTGAGTTCTACCTGCGCATGCTTTCGAGACCCATG 353
Db 1 ArgGlyProGlnSerArgLeuGlnPheTyrluAlaMetProPheIatnPromet 20

RESULT 36
AAE07732
ID AAE07732 standard; peptide: 20 AA.
AC AAE07732;
XX
XX 06-NOV-2001 (first entry)
DT
XX
XX Human NY ESO-1 MHC class II restricted T cell epitope #18.
DE
XX
XX Human, major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
XX Homo sapiens.
OS
XX
XX WO200155393-A2.
PN
XX
XX 02-AUG-2001.
PD
XX
XX 26-JAN-2001; 2001WO-US002765.
PF
XX
XX 28-JAN-2000; 2000US-0179004P.
PR
XX 29-SEP-2000; 2000US-0237107P.
PR
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA
XX
XX Wang R, Rosenberg SA, Zeng G;
PI
XX
XX WPI; 2001-496851/54.
DR
XX
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
XX
XX Claim 4; Fig 3; 134pp; English.
PS
XX
XX The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
```

CC 165 peptide used in the identification of putative MHC class II -  
CC restricted epitopes from HLA-DP4-transgenic mice  
XX  
SQ Sequence 20 AA;  
  
Alignment Scores:  
Pred. No.: 30-8 Length: 20  
Score: 20.00 Matches: 20  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 11.11% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07745 (1-20)  
  
OY 489 CAGCTTCATCATGACTCTGTCTCCAGACGCTTTCCCTGTTGATGTGGATCAGCAGTGC 548  
Db 1 GlnLeuSerXleSerSerCysIreuGInGlnIeuSerLeuMetTrpIleThrGIncs 20  
  
RESULT 38  
ADD71448  
XX ADD71448 standard; peptide, 20 AA.  
XX  
XX ADD71448;  
XX  
DT 15-JAN-2004 (first entry)  
XX  
DE HLA-DP4 binding peptide ligand #10.  
XX  
XX cytostatic; immunostimulant; immunosuppressive; neuroprotective;  
RW antidiabetic; anti-allergic; ligand; HLA-DP4, human leukocyte antigen;  
RW immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;  
KW diabetes; allergy; graft rejection.  
XX  
OS Synthetic.  
XX  
FN FR2830940-A1.  
XX  
PD 18-APR-2003.  
XX  
PE 17-OCT-2001; 2001FR-00013352.  
XX  
PR 17-OCT-2001; 2001FR-00013352.  
XX  
PA (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.  
XX (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.  
XX  
PI Mailleire B, Castella F, Buhot C, Georges B;  
XX  
DR WPI; 2003-395920/38.  
XX  
PT Process for selecting ligands for human leukocyte antigen DP4, useful as  
PT immunomodulators for treating e.g. tumors, based on inhibition of  
PT binding.  
XX  
PS Disclosure, SEQ ID NO 10; 70pp; French.  
XX  
XX The invention relates to a process for selecting ligands (A) of HLA  
CC (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4  
CC with a labelled peptide (I) in presence of different concentrations of  
CC test compounds; (b) separating complexes formed; (c) determining DP4-(I)  
CC complexes by measuring a signal from the label; and (d) selecting  
CC compounds having binding IC50 less than 1000 nM, corresponding to the  
CC concentration required to inhibit 50 % binding of (I). (I) has signal-to-  
CC noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause  
CC activation of T cells, or their energy. (A), or nucleic acid that encodes  
CC pathogens, are useful as immunomodulators, including uses in vaccines against  
CC pathogens and tumor cells, also for treating autoimmune diseases  
CC (multiple sclerosis and type I diabetes), allergy and graft rejection.  
CC (A) are useful as reagents for diagnosing the immune status of an  
CC individual, while labelled complexes of DP4 with (A) are used to select  
CC antigen-specific CD4+ T cells. The method identifies ligands specific for  
CC HLA-DP4 and allows exact definition of the binding motif shared by DP4



CC binding ligands. This sequence represents an example of a peptide ligand  
CC of the invention. The peptides are labelled (biotinylated) at their N-  
CC termini.  
XX  
SQ Sequence 20 AA;  
Alignment Scores:  
Pred. No.: 30.8 Length: 20  
Score: 20.00 Matches: 20  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 11.11% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADD71448 (1-20)  
QY 531 ATGTGATCAGCAGTCTTTCTGCCCCGTTTGGCTCAGCTCCCTCAGGAGAGG 590  
DB 1 MetrpIethrgInCyspheLeuProValPheLeuIaGInProProserGlyGInArg 20  
RESULT 39  
AA152435  
ID AAY52435 standard; protein; 18 AA.  
XX  
AC AAY52435;  
XX  
DT 15-FEB-2000 (first entry)  
XX  
DE Human tumour antigen NY-ESO-1 peptide #8.  
XX  
KM Cancer; tumour; antigen; MHC; major histocompatibility complex; Class II;  
KM T-cell; helper; stimulation; proliferation; treatment; diagnosis;  
KM prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;  
KM hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.  
XX  
OS Synthetic.  
OS Homo sapiens.  
XX  
XX MO9953938-A1.  
XX  
PD 28-OCT-1999.  
XX  
PF 24-MAR-1999; 99WO-US006875.  
XX  
PR 17-APR-1998; 98US-00062422.  
PR 02-OCT-1998; 98US-00165546.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX  
PA  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
PI Gure A, Rittner G;  
XX  
DR WPI; 2000-038483/03.  
XX  
PT Novel peptides which bind to MHC class I and MHC class II molecules,  
PT useful for therapeutic and diagnostic purposes.  
XX  
PS Claim 4; Page 22; 49pp; English.  
XX  
CC Peptides #8-#13 (AAY52435-Y52440) are peptides derived from the human  
CC tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major  
CC histocompatibility Class II HLA-DR53 molecules, thereby stimulating  
CC proliferation of helper T-cells. cDNA encoding NY-ESO-1 was initially  
CC isolated from an oesophagus squamous cell cancer cDNA library. Tissue  
CC localisation studies revealed it to be expressed at high levels in normal  
CC ovary and testis but not in normal colon, kidney, liver, brain,  
CC oesophagus and skin. It was expressed in certain tumours and tumour cell  
CC lines with some degree of frequency - these included melanoma specimens  
CC in other tumour types being sporadic. These NY-ESO-1-derived peptides may  
CC be used in methods and compositions used for the treatment, diagnosis and  
CC prevention of cancers (such as melanoma, breast cancer, prostate cancer,  
CC lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or

CC lymphoma) and to stimulate the proliferation of T cells  
XX  
SQ Sequence 18 AA;  
Alignment Scores:  
Pred. No.: 44.1 Length: 18  
Score: 18.00 Matches: 18  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 10.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY52435 (1-18)  
QY 468 GCTGACAGACCGCCCACTGCGAGCTTCATCAGCTCTGTCTCCAGAGCTT 521  
DB 1 AlaAlaSpHisArgInLeuGInLeuSerXerCysLeuGInGInLeu 18  
RESULT 40  
AA152439  
ID AAY52439 standard; protein; 18 AA.  
XX  
AC AAY52439;  
XX  
DT 15-FEB-2000 (first entry)  
XX  
DE Human tumour antigen NY-ESO-1 peptide #12.  
XX  
KM Cancer; tumour; antigen; MHC; major histocompatibility complex; Class II;  
KM T-cell; helper; stimulation; proliferation; treatment; diagnosis;  
KM prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;  
KM hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.  
XX  
OS Synthetic.  
OS Homo sapiens.  
XX  
XX MO9953938-A1.  
XX  
PD 28-OCT-1999.  
XX  
PF 24-MAR-1999; 99WO-US006875.  
XX  
PR 17-APR-1998; 98US-00062422.  
PR 02-OCT-1998; 98US-00165546.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX  
PA  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
PI Gure A, Rittner G;  
XX  
DR WPI; 2000-038483/03.  
XX  
PT Novel peptides which bind to MHC class I and MHC class II molecules,  
PT useful for therapeutic and diagnostic purposes.  
XX  
PS Claim 4; Page 22; 49pp; English.  
XX  
CC Peptides #8-#13 (AAY52435-Y52440) are peptides derived from the human  
CC tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major  
CC histocompatibility Class II HLA-DR53 molecules, thereby stimulating  
CC proliferation of helper T-cells. cDNA encoding NY-ESO-1 was initially  
CC isolated from an oesophagus squamous cell cancer cDNA library. Tissue  
CC localisation studies revealed it to be expressed at high levels in normal  
CC ovary and testis but not in normal colon, kidney, liver, brain,  
CC oesophagus and skin. It was expressed in certain tumours and tumour cell  
CC lines with some degree of frequency - these included melanoma specimens  
CC in other tumour types being sporadic. These NY-ESO-1-derived peptides may  
CC be used in methods and compositions used for the treatment, diagnosis and  
CC prevention of cancers (such as melanoma, breast cancer, prostate cancer,  
CC lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or  
CC lymphoma) and to stimulate the proliferation of T cells

SO Sequence 18 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 44.1    | Length:       | 18 |
| Score:                 | 18.00   | Matches:      | 18 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 10.00%  | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAY52439 (1-18)

QY 306 AGCCGCGCTTGAGTTCTACTCGCCATGCTTTGCGACACCCATGGAGCA 359

Db 1 SerArgLeuLeuGluPheTyrIleuAlaMetProPheAlaIthrProMetGluAla 18

RESULT 41

AAY52438

ID AAY52438 standard; protein; 18 AA.

AC AAY52438;

XX

XX

DT 15-FEB-2000 (first entry)

XX

DE Human tumour antigen NY-ESO-1 peptide #11.

XX

XX Cancer; tumour; antigen; MHC; major histocompatibility complex; Class II;

KM T-cell; helper; stimulation; proliferation; treatment; diagnosis;

KM prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;

KM hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.

XX

OS Synthetic.

OS Homo sapiens.

XX

XX MO9953938-A1.

XX

XX 28-OCT-1999.

XX

XX 24-MAR-1999; 99WO-US006875.

XX

XX 17-APR-1998; 98US-00062422.

XX

XX 02-OCT-1998; 98US-00165546.

XX

PA (LUDM-) LUDWIG INST CANCER RES.

XX

XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;

PI Gure A, Ritter G;

XX

XX WPI; 2000-038483/03.

DR

PT Novel peptides which bind to MHC class I and MHC class II molecules,

PT useful for therapeutic and diagnostic purposes.

XX

XX

PS Claim 4; Page 22; 49pp; English.

XX

CC Peptides #8-#13 (AAY52435-Y52440) are peptides derived from the human

CC tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major

CC histocompatibility) Class II HLA-DR53 molecules, thereby stimulating

CC proliferation of helper T-cells. cDNA encoding NY-ESO-1 was initially

CC isolated from an oesophagus squamous cell cancer cDNA library. Tissue

CC localisation studies revealed it to be expressed at high levels in normal

CC ovary and testis but not in normal colon, kidney, liver, brain,

CC oesophagus and skin. It was expressed in certain tumours and tumour cell

CC lines with some degree of frequency - these included melanoma specimens

CC and cell lines, and breast and bladder cancer specimens, with expression

CC in other tumour types being sporadic. These NY-ESO-1-derived peptides may

CC be used in methods and compositions used for the treatment, diagnosis and

CC prevention of cancers (such as melanoma, breast cancer, prostate cancer,

CC lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or

CC lymphoma) and to stimulate the proliferation of T cells

XX

XX Sequence 18 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 44.1    | Length:       | 18 |
| Score:                 | 18.00   | Matches:      | 18 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 10.00%  | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAY52438 (1-18)

QY 252 GGGCGGCTTGAGGCTGAATGATGCTGCGAGATGCGGGGCGCAGGGCGCGAG 305

Db 1 GlyAlaIaSerGlyLeuAlaSerGlyCysGlyArgGlyGlyAlaArgGlyProGlu 18

RESULT 42

AAY52440

ID AAY52440 standard; protein; 18 AA.

AC AAY52440;

XX

XX

DT 15-FEB-2000 (first entry)

XX

DE Human tumour antigen NY-ESO-1 peptide #13.

XX

XX Cancer; tumour; antigen; MHC; major histocompatibility complex; Class II;

KM T-cell; helper; stimulation; proliferation; treatment; diagnosis;

KM prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;

KM hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.

XX

OS Synthetic.

OS Homo sapiens.

XX

XX MO9953938-A1.

XX

XX 28-OCT-1999.

XX

XX 24-MAR-1999; 99WO-US006875.

XX

XX 17-APR-1998; 98US-00062422.

XX

XX 02-OCT-1998; 98US-00165546.

XX

PA (LUDM-) LUDWIG INST CANCER RES.

XX

XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;

PI Gure A, Ritter G;

XX

XX WPI; 2000-038483/03.

DR

PT Novel peptides which bind to MHC class I and MHC class II molecules,

PT useful for therapeutic and diagnostic purposes.

XX

XX

PS Claim 4; Page 22; 49pp; English.

XX

CC Peptides #8-#13 (AAY52435-Y52440) are peptides derived from the human

CC tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major

CC histocompatibility) Class II HLA-DR53 molecules, thereby stimulating

CC proliferation of helper T-cells. cDNA encoding NY-ESO-1 was initially

CC isolated from an oesophagus squamous cell cancer cDNA library. Tissue

CC localisation studies revealed it to be expressed at high levels in normal

CC ovary and testis but not in normal colon, kidney, liver, brain,

CC oesophagus and skin. It was expressed in certain tumours and tumour cell

CC lines with some degree of frequency - these included melanoma specimens

CC and cell lines, and breast and bladder cancer specimens, with expression

CC in other tumour types being sporadic. These NY-ESO-1-derived peptides may

CC be used in methods and compositions used for the treatment, diagnosis and

CC prevention of cancers (such as melanoma, breast cancer, prostate cancer,

CC lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or

CC lymphoma) and to stimulate the proliferation of T cells

XX

XX Sequence 18 AA;

Alignment Scores:

|            |      |         |    |
|------------|------|---------|----|
| Pred. No.: | 44.1 | Length: | 18 |
|------------|------|---------|----|

Score: 18.00 Matches: 18  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 10.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY52440 (1-18)

QY 432 ACTGTGTCGGCAATACATCTATCCGACTGCTGTGTCGACACCGCCAA 485  
DB 1 ThrValSerGlyAanIleuThrIleArgPheThrAlaIleAspHisArgIn 18

RESULT 43  
AAB69941  
ID AAB69941 standard; peptide: 18 AA.  
AC AAB69941;  
XX 27-APR-2001 (first entry)  
XX  
XX Human NY-ESO-1 HLA-DR53 binding motif #3.  
DE  
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
XX Homo sapiens.  
OS  
XX MO200107917-A1.  
PN  
XX 01-FEB-2001.  
PD  
XX 14-JUL-2000; 2000WO-US019220.  
PF  
XX 23-JUL-1999; 99US-00359503.  
PR  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX WPI; 2001-182822/18.  
DR  
XX Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
PS Example 16; Page 27; 50pp; English.  
XX  
CC The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
CC  
XX Sequence 18 AA;  
SQ

Alignment Scores:  
Pred. No.: 44.1 Length: 18  
Score: 18.00 Matches: 18  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 10.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69941 (1-18)

QY 396 CCGCTTCCCGTTCGAGGGGCTTTCGAGAGATTCACTGTGTCGGCAACATA 449  
DB 1 ProleuProValProGlyValLeuLeuYsGluPheThrValSerGlyAanIle 18

RESULT 44  
AAB69942  
ID AAB69942 standard; peptide: 18 AA.  
AC AAB69942;  
XX 27-APR-2001 (first entry)  
XX  
XX Human NY-ESO-1 HLA-DR53 binding motif #4.  
DE  
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
XX Homo sapiens.  
OS  
XX MO200107917-A1.  
PN  
XX 01-FEB-2001.  
PD  
XX 14-JUL-2000; 2000WO-US019220.  
PF  
XX 23-JUL-1999; 99US-00359503.  
PR  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX WPI; 2001-182822/18.  
DR  
XX Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
PS Example 16; Page 28; 50pp; English.  
XX  
CC The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
CC  
XX Sequence 18 AA;  
SQ

Alignment Scores:  
Pred. No.: 44.1 Length: 18  
Score: 18.00 Matches: 18  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 10.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69942 (1-18)

QY 252 GCGCGGCTTCAGGGCTGAATGATGCTGCAGATCGCGGGCCAGGCGCGAG 305  
DB 1 GlyAlaIleSerGlyLeuAenGlyCysCysArgCysGlyAlaArgGlyProGlu 18

```
RESULT 45
AAB69940
ID AAB69940 standard; peptide; 18 AA.
XX
XX
AC AAB69940;
XX
XX 27-APR-2001 (first entry)
DT
XX
XX Human NY-ESO-1 HLA-DR53 binding motif #2.
DE
XX
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
XX Homo sapiens.
OS
XX WO200107917-A1.
XX
XX 01-FEB-2001.
PD
XX 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDM-) LUDWIG INST CANCER RES.
PA (SLOK ) SLOAN KETTERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
PI
XX WPI; 2001-182822/18.
DR
XX
XX Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
XX Example 16; Page 27; 50pp; English.
PS
XX
XX The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
XX Sequence 18 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 44.1 Length: 18
Score: 18.00 Matches: 18
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 10.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69940 (1-18)
OY 414 GTGCTTTCGAGAGTTCAGTGTGTCGGGCAACATACGACTATCCGACTGACT 467
ID AAB69944 standard; peptide; 18 AA.
XX
XX AAB69944
AC AAB69944;
XX
```

```
DT 27-APR-2001 (first entry)
XX
XX Human NY-ESO-1 HLA-DR53 binding motif #6.
DE
XX
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
XX Homo sapiens.
OS
XX WO200107917-A1.
XX
XX 01-FEB-2001.
PD
XX 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDM-) LUDWIG INST CANCER RES.
PA (SLOK ) SLOAN KETTERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
PI
XX WPI; 2001-182822/18.
DR
XX
XX Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
XX Example 16; Page 28; 50pp; English.
PS
XX
XX The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
XX Sequence 18 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 44.1 Length: 18
Score: 18.00 Matches: 18
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 10.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69944 (1-18)
OY 432 ACTGTGTCGGGCAACATACGACTGATCCGACTGCTGCGACACCGCCGAA 485
ID AAB69943 standard; peptide; 18 AA.
XX
XX AAB69943;
AC AAB69943;
XX
XX 27-APR-2001 (first entry)
DT
XX
XX Human NY-ESO-1 HLA-DR53 binding motif #5.
DE
XX
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW
```

```
KM non-small cell lung carcinoma; tumour status determination.
XX
XX Homo sapiens.
XX
XX WO200107917-A1.
XX
XX 01-FEB-2001.
XX
XX 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX (SLOK ) SLOAN KETTERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M,
XX
XX WPI; 2001-182822/18.
XX
XX Method useful for determining the status (e.g. progression, regression or
XX stability of the disease) of a cancerous condition, involves determining
XX the levels of NY-ESO-1 specific antibodies in a sample taken from a
XX patient.
XX
XX Example 16; Page 28; 50pp; English.
XX
XX The present sequence is given in a specification relating to a method for
XX determining the status of a cancerous condition in a patient with a
XX tumour that expresses NY-ESO-1. The method comprises assaying a sample
XX taken from the patient for antibodies that specifically bind to the NY-
XX ESO-1 and comparing the value obtained to a prior value obtained from
XX assay of a prior sample taken from the patient. Any difference between
XX the values is indicative of a change in status of the cancerous
XX condition. The method is useful for determining whether a cancerous
XX condition is progressing, regressing or remaining stable, in particular
XX in patients receiving treatment for a melanoma, adenocarcinoma, non-small
XX cell lung carcinoma or bladder carcinoma
XX
XX Sequence 18 AA;
XX
XX Alignment Scores:
XX Pred. No.: 44.1 Length: 18
XX Score: 18.00 Matches: 18
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 10.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAB69943 (1-18)
XX
XX QY 306 AGCGCGCTGCTTGAAGTTCTACCTCGCCATGCGCTTTCGCGACACCCGAGGAGCA 359
XX |||||
XX DB 1 SerArgLeuLeuGluPheTyrLeuAlaMetProPheAlaIatnPrometGluAla 18
XX |||||
XX
XX RESULT 48
XX AAB69939
XX ID AAB69939 standard; peptide; 18 AA.
XX
XX AAB69939;
XX
XX 27-APR-2001 (first entry)
XX
XX Human NY-ESO-1 HLA-DR53 binding motif #1.
XX
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
XX HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
XX non-small cell lung carcinoma; tumour status determination.
XX
XX Homo sapiens.
XX
XX WO200107917-A1.
XX
```

```
PD 01-FEB-2001.
XX
XX 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX (SLOK ) SLOAN KETTERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
XX WPI; 2001-182822/18.
XX
XX Method useful for determining the status (e.g. progression, regression or
XX stability of the disease) of a cancerous condition, involves determining
XX the levels of NY-ESO-1 specific antibodies in a sample taken from a
XX patient.
XX
XX Example 16; Page 27; 50pp; English.
XX
XX The present sequence is given in a specification relating to a method for
XX determining the status of a cancerous condition in a patient with a
XX tumour that expresses NY-ESO-1. The method comprises assaying a sample
XX taken from the patient for antibodies that specifically bind to the NY-
XX ESO-1 and comparing the value obtained to a prior value obtained from
XX assay of a prior sample taken from the patient. Any difference between
XX the values is indicative of a change in status of the cancerous
XX condition. The method is useful for determining whether a cancerous
XX condition is progressing, regressing or remaining stable, in particular
XX in patients receiving treatment for a melanoma, adenocarcinoma, non-small
XX cell lung carcinoma or bladder carcinoma
XX
XX Sequence 18 AA;
XX
XX Alignment Scores:
XX Pred. No.: 44.1 Length: 18
XX Score: 18.00 Matches: 18
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 10.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAB69939 (1-18)
XX
XX QY 468 GCTGCAACCCAGCCGACACTGACGCTTCGATGAGCTCTGCTCCAGCAGCTT 521
XX |||||
XX DB 1 AlaAlaAspHisArgLeuGlnLeuSerXerIleSerSerCysLeuGlnGlnLeu 18
XX |||||
XX
XX RESULT 49
XX AAU01539
XX ID AAU01539 standard; peptide; 18 AA.
XX
XX AAU01539;
XX
XX 18-JUL-2001 (first entry)
XX
XX HLA-DR53 recognising NY-ESO-1 peptide #1.
XX
XX NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
XX major histocompatibility complex; helper T cell; HLA-DR; cancer;
XX human leukocyte antigen-determining region; disease progression;
XX disease regression; disease onset; body tissue; body fluid; enzyme label;
XX radioactive label; monoclonal antibody.
XX
XX Homo sapiens.
XX
XX WO200123560-A2.
XX
XX 05-APR-2001.
XX
XX 26-SEP-2000; 2000WO-US026411.
XX
```

```
PR 29-SEP-1999; 99US-00408036.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX
XX Tureci O, Sahin U, Pfreundschuh M;
XX
XX WPI; 2001-266156/27.
DR
XX Polypeptides binding to major histocompatibility complex class II human
XX leucocyte antigen-determining region molecule having amino acid sequence
XX found in tumor rejection antigen precursor used for stimulating
XX proliferation of helper T cells.
XX
XX Example 13; Page 19; 62pp; English.
XX
XX The sequence represents a human NY-ESO-1 tumour rejection antigen
XX precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
XX SSX-2 polypeptides, or fragments of, bind to major histocompatibility
XX complex (MHC) Class II molecules such as human leukocyte antigen-
XX determining region (HLA-DR) molecules and stimulate proliferation of
XX helper T cells. The peptides can be administered to an HLA-DR positive
XX subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
XX NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
XX free form is useful for this stimulation. The nucleic acid is useful for
XX screening for a cancerous condition, which involves contacting a subject
XX sample to a cell line transfected with the immunoreactive cell (helper T
XX cell), where interaction is indicative of cancer. In addition, a sample
XX from a patient (for example, a body fluid or tissue) can be monitored for
XX the amount of the complex present in the bloodstream. This is useful for
XX determining regression, progression or onset of a cancerous condition.
XX The method involves contacting the sample with a radioactive labelled or
XX enzyme labelled monoclonal antibody which specifically binds with the
XX complex
XX
XX SQ Sequence 18 AA;
XX
XX Alignment Scores:
XX Pred. No.: 44.1 Length: 18
XX Score: 18.00 Matches: 18
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 10.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAU01539 (1-18)
OY 468 GGTGAGACACACCGCCCACTGAGCTTCATCAGCTCCTGCTCCAGAGCTT 521
DB 1 AAlaAlaaphhISArgInLeuGInLeuSerIleSerSerCysLeuGInGInLeu 18
RESULT 50
AAU01543
ID AAU01543 standard; peptide; 18 AA.
XX
XX AAU01543;
XX
XX 18-JUL-2001 (first entry)
XX
XX HLA-DR53 recognising NY-ESO-1 peptide #5.
XX
XX NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
XX major histocompatibility complex; helper T cell; HLA-DR; cancer;
XX human leukocyte antigen-determining region; disease progression;
XX disease regression; disease onset; body tissue; body fluid; enzyme label;
XX radioactive label; monoclonal antibody.
XX
XX Homo sapiens.
XX
XX WO200123560-A2.
XX
XX 05-APR-2001.
XX
XX 26-SEP-2000; 2000WO-US026411.
XX
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XX
XX 29-SEP-1999; 99US-00408036.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX
XX Tureci O, Sahin U, Pfreundschuh M;
XX
XX WPI; 2001-266156/27.
DR
XX Polypeptides binding to major histocompatibility complex class II human
XX leucocyte antigen-determining region molecule having amino acid sequence
XX found in tumor rejection antigen precursor used for stimulating
XX proliferation of helper T cells.
XX
XX Example 13; Page 19; 62pp; English.
XX
XX The sequence represents a human NY-ESO-1 tumour rejection antigen
XX precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
XX SSX-2 polypeptides, or fragments of, bind to major histocompatibility
XX complex (MHC) Class II molecules such as human leukocyte antigen-
XX determining region (HLA-DR) molecules and stimulate proliferation of
XX helper T cells. The peptides can be administered to an HLA-DR positive
XX subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
XX NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
XX free form is useful for this stimulation. The nucleic acid is useful for
XX screening for a cancerous condition, which involves contacting a subject
XX sample to a cell line transfected with the immunoreactive cell (helper T
XX cell), where interaction is indicative of cancer. In addition, a sample
XX from a patient (for example, a body fluid or tissue) can be monitored for
XX the amount of the complex present in the bloodstream. This is useful for
XX determining regression, progression or onset of a cancerous condition.
XX The method involves contacting the sample with a radioactive labelled or
XX enzyme labelled monoclonal antibody which specifically binds with the
XX complex
XX
XX SQ Sequence 18 AA;
XX
XX Alignment Scores:
XX Pred. No.: 44.1 Length: 18
XX Score: 18.00 Matches: 18
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 10.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAU01543 (1-18)
OY 306 AGCCGCTGCTTGAAGTCTTCTACCTGCGCATGCGCTTTCGCCGACACCCAGGAAGCA 359
DB 1 SerArgLeuLeuGInuPheTyYLLeuAlaMetProPheAlaThrProMetGluAla 18
RESULT 51
AAU01544
ID AAU01544 standard; peptide; 18 AA.
XX
XX AAU01544;
XX
XX 18-JUL-2001 (first entry)
XX
XX HLA-DR53 recognising NY-ESO-1 peptide #6.
XX
XX NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
XX major histocompatibility complex; helper T cell; HLA-DR; cancer;
XX human leukocyte antigen-determining region; disease progression;
XX disease regression; disease onset; body tissue; body fluid; enzyme label;
XX radioactive label; monoclonal antibody.
XX
XX Homo sapiens.
XX
XX WO200123560-A2.
XX
XX 05-APR-2001.
XX
```

```
PF 26-SEP-2000; 2000MO-US026411.
XX
XX 29-SEP-1999; 99US-00408036.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX
XX Tureci O, Sahin U, Pfeundschn M;
XX WPI; 2001-266156/27.
XX
XX Polypeptides binding to major histocompatibility complex class II human
XX leukocyte antigen-determining region molecule having amino acid sequence
XX found in tumor rejection antigen precursor used for stimulating
XX proliferation of helper T cells.
XX
XX Example 13; Page 19; 62pp; English.
XX
XX The sequence represents a human NY-ESO-1 tumour rejection antigen
XX precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
XX SSX-2 polypeptides, or fragments of, bind to major histocompatibility
XX complex (MHC) Class II molecules such as human leukocyte antigen-
XX determining region (HLA-DR) molecules and stimulate proliferation of
XX helper T cells. The peptides can be administered to an HLA-DR positive
XX subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
XX NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
XX free form is useful for this stimulation. The nucleic acid is useful for
XX screening for a cancerous condition, which involves contacting a subject
XX sample to a cell line transfected with the immunoreactive cell (helper T
XX cell), where interaction is indicative of cancer. In addition, a sample
XX from a patient (for example, a body fluid or tissue) can be monitored for
XX the amount of the complex present in the bloodstream. This is useful for
XX determining regression, progression or onset of a cancerous condition.
XX The method involves contacting the sample with a radioactive labelled or
XX enzyme labelled monoclonal antibody which specifically binds with the
XX complex
XX
XX Sequence 18 AA;
XX
XX Alignment Scores:
XX Pred. No.: 44.1 Length: 18
XX Score: 18.00 Matches: 18
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 10.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAU01544 (1-18)
XX
XX QY 432 ACTGTGTCGGGCAACATGACTATCGACTGCTGCGAGACCGGCGAA 485
XX |||||
XX 1 ThrValSerGlyAlaIleuThrIleArgLeuThrAlaIleuPheArgGln 18
XX
XX RESULT 52
XX AAU01542
XX ID AAU01542 standard; peptide; 18 AA.
XX
XX AC AAU01542;
XX
XX DT 18-JUL-2001 (first entry)
XX
XX DE HLA-DR53 recognising NY-ESO-1 peptide #4.
XX
XX NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
XX major histocompatibility complex; helper T cell; HLA-DR; cancer;
XX human leukocyte antigen-determining region; disease progression;
XX disease regression; disease onset; body tissue; body fluid; enzyme label;
XX radioactive label; monoclonal antibody.
XX
XX Homo sapiens.
XX
XX OS
XX MO200123560-A2.
XX
XX PD 05-APR-2001.
```

```
XX
XX 26-SEP-2000; 2000MO-US026411.
XX
XX 29-SEP-1999; 99US-00408036.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX
XX Tureci O, Sahin U, Pfeundschn M;
XX WPI; 2001-266156/27.
XX
XX Polypeptides binding to major histocompatibility complex class II human
XX leukocyte antigen-determining region molecule having amino acid sequence
XX found in tumor rejection antigen precursor used for stimulating
XX proliferation of helper T cells.
XX
XX Example 13; Page 19; 62pp; English.
XX
XX The sequence represents a human NY-ESO-1 tumour rejection antigen
XX precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
XX SSX-2 polypeptides, or fragments of, bind to major histocompatibility
XX complex (MHC) Class II molecules such as human leukocyte antigen-
XX determining region (HLA-DR) molecules and stimulate proliferation of
XX helper T cells. The peptides can be administered to an HLA-DR positive
XX subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
XX NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
XX free form is useful for this stimulation. The nucleic acid is useful for
XX screening for a cancerous condition, which involves contacting a subject
XX sample to a cell line transfected with the immunoreactive cell (helper T
XX cell), where interaction is indicative of cancer. In addition, a sample
XX from a patient (for example, a body fluid or tissue) can be monitored for
XX the amount of the complex present in the bloodstream. This is useful for
XX determining regression, progression or onset of a cancerous condition.
XX The method involves contacting the sample with a radioactive labelled or
XX enzyme labelled monoclonal antibody which specifically binds with the
XX complex
XX
XX Sequence 18 AA;
XX
XX Alignment Scores:
XX Pred. No.: 44.1 Length: 18
XX Score: 18.00 Matches: 18
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 10.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAU01542 (1-18)
XX
XX QY 252 GGCGGCGCTTCAGGCGCTGAATGATGCTGCGAGATCGGGGCGGCGGAG 305
XX |||||
XX 1 GlyAlaIleuSerGlyLeuAsnGlyCysCybArgCysGlyAlaArgGlyProGlu 18
XX
XX RESULT 53
XX AAU01540
XX ID AAU01540 standard; peptide; 18 AA.
XX
XX AC AAU01540;
XX
XX DT 18-JUL-2001 (first entry)
XX
XX DE HLA-DR53 recognising NY-ESO-1 peptide #2.
XX
XX NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
XX major histocompatibility complex; helper T cell; HLA-DR; cancer;
XX human leukocyte antigen-determining region; disease progression;
XX disease regression; disease onset; body tissue; body fluid; enzyme label;
XX radioactive label; monoclonal antibody.
XX
XX Homo sapiens.
XX
XX OS
XX MO200123560-A2.
XX
XX PD
```

```
PD 05-APR-2001.
XX
XX 26-SEP-2000; 2000MO-US026411.
XX
XX 29-SEP-1999; 99US-00408036.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX
XX Tureci O, Sahin U, Pfeundschnuh M;
XX
XX WPI; 2001-266156/27.
XX
XX Polypeptides binding to major histocompatibility complex class II human
XX leukocyte antigen-determining region molecule having amino acid sequence
XX found in tumor rejection antigen precursor used for stimulating
XX proliferation of helper T cells.
XX
XX Example 13; Page 19; 62pp; English.
XX
XX The sequence represents a human NY-ESO-1 tumour rejection antigen
XX precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
XX SSX-2 polypeptides, or fragments of, bind to major histocompatibility
XX complex (MHC) Class II molecules such as human leukocyte antigen-
XX determining region (HLA-DR) molecules and stimulate proliferation of
XX helper T cells. The peptides can be administered to an HLA-DR positive
XX subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
XX NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
XX free form is useful for this stimulation. The nucleic acid is useful for
XX screening for a cancerous condition, which involves contacting a subject
XX sample to a cell line transfected with the immunoreactive cell (helper T
XX cell), where interaction is indicative of cancer. In addition, a sample
XX from a patient (for example, a body fluid or tissue) can be monitored for
XX the amount of the complex present in the bloodstream. This is useful for
XX determining regression, progression or onset of a cancerous condition.
XX The method involves contacting the sample with a radioactive labelled or
XX enzyme labelled monoclonal antibody which specifically binds with the
XX complex
XX
XX SQ Sequence 18 AA;

Alignment Scores:
Pred. No.: 44.1 Length: 18
Score: 18.00 Matches: 18
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 10.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAU01540 (1-18)

QY 414 GTGCTTCGAGAGTTCAGTGTGTCGGCAACATGACTATGCCAGTACT 467
DB 1 ValLeuLeuYgLIuPherTherValSerGIyAenIleLeuThrIIeArgLeuThr 18

RESULT 54
AAU01541
ID AAU01541 standard; peptide; 18 AA.
XX
XX AAU01541;
XX
XX 18-JUL-2001 (first entry)
XX
XX HLA-DR53 recognising NY-ESO-1 peptide #3.
XX
XX NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
XX major histocompatibility complex; helper T cell; HLA-DR; cancer;
XX human leukocyte antigen-determining region; disease progression;
XX disease regression; disease onset; body tissue; body fluid; enzyme label;
XX radioactive label; monoclonal antibody.
XX
XX Homo sapiens.
XX
XX OS
XX
XX PN WO200123560-A2.
```

```
XX
XX 05-APR-2001.
XX
XX 26-SEP-2000; 2000MO-US026411.
XX
XX 29-SEP-1999; 99US-00408036.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX
XX Tureci O, Sahin U, Pfeundschnuh M;
XX
XX WPI; 2001-266156/27.
XX
XX Polypeptides binding to major histocompatibility complex class II human
XX leukocyte antigen-determining region molecule having amino acid sequence
XX found in tumor rejection antigen precursor used for stimulating
XX proliferation of helper T cells.
XX
XX Example 13; Page 19; 62pp; English.
XX
XX The sequence represents a human NY-ESO-1 tumour rejection antigen
XX precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and
XX SSX-2 polypeptides, or fragments of, bind to major histocompatibility
XX complex (MHC) Class II molecules such as human leukocyte antigen-
XX determining region (HLA-DR) molecules and stimulate proliferation of
XX helper T cells. The peptides can be administered to an HLA-DR positive
XX subject in order to stimulate the helper T cells. An MHC Class II HLA-DR-
XX NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in
XX free form is useful for this stimulation. The nucleic acid is useful for
XX screening for a cancerous condition, which involves contacting a subject
XX sample to a cell line transfected with the immunoreactive cell (helper T
XX cell), where interaction is indicative of cancer. In addition, a sample
XX from a patient (for example, a body fluid or tissue) can be monitored for
XX the amount of the complex present in the bloodstream. This is useful for
XX determining regression, progression or onset of a cancerous condition.
XX The method involves contacting the sample with a radioactive labelled or
XX enzyme labelled monoclonal antibody which specifically binds with the
XX complex
XX
XX SQ Sequence 18 AA;

Alignment Scores:
Pred. No.: 44.1 Length: 18
Score: 18.00 Matches: 18
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 10.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAU01541 (1-18)

QY 396 CCGCTTCGCCGTGCGAGGGGTGCTTCGAGAGTTCAGTGTGTCGGCAACATA 449
DB 1 ProLeuProValProGIyValLeuLeuYgLIuPherTherValSerGIyAenIIe 18

RESULT 55
AAE07769
ID AAE07769 standard; peptide; 18 AA.
XX
XX AAE07769;
XX
XX 06-NOV-2001 (first entry)
XX
XX Human NY ESO-1 HLA DR restricted T cell cancer peptide #1.
XX
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;
XX NY ESO-1 protein; CD4+ T lymphocyte; human leukocyte antigen; HLA;
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;
XX immunotherapy.
XX
XX Homo sapiens.
XX
XX OS
XX
XX XX
```



PN W0200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
XX 29-SEP-2000; 2000US-0237107P.  
XX  
FA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX WPI; 2001-496851/54.  
DR  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 84; Page 84; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC HLA DR restricted T cell cancer peptide  
XX  
SQ Sequence 18 AA;  
XX  
Alignment Scores:  
Pred. No.: 44.1 Length: 18  
Score: 18.00 Matches: 18  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 10.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07769 (1-18)  
QY 414 GTGCTTGAAGAGTCACTGTGTCCGGCAACATACCTAGCTACGACTACT 467  
Db 1 ValLeuLeuLysGluPheThrValSerGlyAsnIleLeuThrIleArgLeuThr 18  
RESULT 56  
AAE07770  
ID AAE07770 standard; peptide; 18 AA.  
XX  
AC AAE07770;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 HLA DR restricted T cell cancer peptide #2.  
XX  
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX

PN W0200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
XX 29-SEP-2000; 2000US-0237107P.  
XX  
FA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX WPI; 2001-496851/54.  
DR  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 84; Page 84; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC HLA DR restricted T cell cancer peptide  
XX  
SQ Sequence 18 AA;  
XX  
Alignment Scores:  
Pred. No.: 44.1 Length: 18  
Score: 18.00 Matches: 18  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 10.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07770 (1-18)  
QY 468 GCTGCAGACCAAGCCGCACTGCAGCTTCATCACTCTCTCTCCAGAGCTT 521  
Db 1 AlaAlaAspHisArgGlnLeuGlnLeuSerXerCysreugInGlnLeu 18  
RESULT 57  
ABG79132  
ID ABG79132 standard; peptide; 18 AA.  
XX  
AC ABG79132;  
XX  
DT 15-NOV-2002 (first entry)  
XX  
DE Human NY-ESO-1 class II HLA tumour-restricted antigen peptide #3.  
XX  
XX Cell penetrating peptide; cancer; tumour; melanoma; thymoma; antigen;  
KW lymphoma; sarcoma; lung cancer; non-Hodgkin's lymphoma; leukaemia;  
KW Hodgkin's lymphoma; uterine cancer; cervical cancer; bladder cancer;  
KW kidney cancer; adenocarcinoma; breast cancer; prostate cancer;  
KW ovarian cancer; pancreatic cancer; epithel; vaccine; dendritic cell;  
KW tumour infiltrating lymphocyte; TIL; human leucocyte antigen; HLA;  
KW cytostatic; human.  
XX

OS Homo sapiens.  
XX WO200264057-A2.  
XX  
XX 22-AUG-2002.  
XX  
XX 15-FEB-2002; 2002WO-US005212.  
XX  
XX 15-FEB-2001; 2001US-0266867P.  
XX  
XX (BAYLOR COLLEGE MEDICINE.  
XX Wang R;  
XX WPI; 2002-627577/67.  
XX  
XX Novel composition for treating a disease in an animal, comprises an  
PT immune effector cell and cell penetrating peptide associated with an  
PT antigen or antibody.  
XX  
XX Disclosure; Page 22; 61pp; English.  
XX  
XX The invention relates to a composition (1) comprising an immune effector  
CC cell and a cell penetrating peptide (CPP) associated with an antigen or  
CC antibody. Also included are (1) a vaccine comprising (1), CPP associated  
CC with an antigen, and a pharmaceutically acceptable carrier and (2)  
CC preparing a composition for a disease, by providing (1) and CPP  
CC associated with an antigen for disease, and introducing the antigen-  
CC associated CPP to (1), where antigen enters into the cell. The antigens  
CC are, for example, tumour antigen derived epitopes recognised by tumour  
CC infiltrating lymphocytes (TIL) of HLA (human leukocyte antigen) class I  
CC or II. The composition is useful for enhancing immunity in an animal to a  
CC disease, by administering a mature dendritic cell comprising CPP  
CC associated with an antigen to disease, to the animal, such that following  
CC the administration, animal is protected from disease, where the animal  
CC comprises both CD4+ and CD8+ T cells. It is also useful for treating a  
CC disease (e.g. cancer, tumour, melanoma, thymoma, lymphoma, sarcoma, lung  
CC cancer, non-Hodgkin's lymphoma, leukaemia, Hodgkin's lymphoma, uterine  
CC cancer, cervical cancer, bladder cancer, kidney cancer, adenocarcinoma,  
CC breast cancer, prostate cancer, ovarian cancer and pancreatic cancer).  
CC The animal is further subjected to a cancer treatment including surgery,  
CC radiation, chemotherapy or gene therapy. The administration of (1),  
CC preferably dendritic cell is prior to, subsequent to or concurrent with,  
CC the cancer treatment. The present sequence is a tumour antigen derived  
CC epitope for inclusion in the composition of the invention  
XX  
XX Sequence 18 AA;  
SQ  
Alignment Scores:  
Pred. No.: 44.1 Length: 18  
Score: 18.00 Matches: 18  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 10.00% Indels: 0  
Gaps: 0  
US-10-023-182-1 (1-752) x ABG79132 (1-18)  
QY 468 GCTGCAGACCAACCGCCAGCTTCATCAGCTCCTGCTCCAGAGCTT 521  
DB 1 AAlaAlaPhHisArgGlnLeuGlnLeuSerTleSerSerCysLeuGlnGlnLeu 18  
RESULT 58  
ID ADD35557  
ADD35557 standard; peptide; 18 AA.  
XX  
XX ADD35557;  
AC  
XX 15-JAN-2004 (first entry)  
DT  
XX Human NY-ESO-1 peptide SEQ ID NO:7.  
DE  
XX human leukocyte antigen; HLA; cytolytic T cell stimulator;  
KM

KM immune response; cytostatic; gene therapy; human; NY-ESO-1;  
XX immunogenic tumour antigen.  
XX  
XX Homo sapiens.  
OS  
XX WO2003068800-A2.  
XX  
XX 21-AUG-2003.  
XX  
XX 12-FEB-2003; 2003WO-US004182.  
XX  
XX 13-FEB-2002; 2002US-0355828P.  
XX  
XX (LUDWIG INST CANCER RES.  
XX Jager B, Knuth A, Old L, Grjatic S;  
XX WPI; 2003-902684/82.  
XX  
XX New isolated peptide that binds to an HLA molecule, useful for treating a  
PT subject with a disorder characterized by the presence of complexes of an  
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune  
PT response.  
XX  
XX Claim 14; SEQ ID NO 7; 73pp; English.  
XX  
XX The present invention describes an isolated peptide (1) consisting of 8-  
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-  
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for  
CC complexes of the peptide and the HLA molecule, where at least 8 contiguous  
CC amino acid sequence of the peptide consist of at least 8 contiguous  
CC described: (1) a composition comprising (1) and a carrier; (2) an  
CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an  
CC expression vector comprising the nucleic acid of (2) in operable linkage  
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
CC isolated tetramer comprising the HLA molecule, biotin and a binding  
CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
CC inducing an immune response in a subject; (12) treating a subject with a  
CC disorder characterised by the presence of complexes of an HLA molecule  
CC and the peptide; (13) a combinatorial library of derivatives of (1),  
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
CC for an analogue of (1); (15) an isolated antibody or its fragment that  
CC specifically binds a HLA/peptide complex, or (1); (16) an isolated  
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
CC and (17) inducing an immune response on a subject having a disorder  
CC characterised by the presence of the HLA molecule and the peptide. (1)  
CC has cytostatic activity, and can be used in gene therapy. The peptides,  
CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
CC useful for treating a subject with a disorder characterised by the  
CC presence of complexes of an HLA molecule and the peptide, and for  
CC inducing an immune response. The present sequence represents a human NY-  
CC ESO-1 peptide, which is used in the exemplification of the present  
CC invention. NY-ESO-1 is an immunogenic tumour antigen.  
XX  
XX Sequence 18 AA;  
SQ  
Alignment Scores:  
Pred. No.: 44.1 Length: 18  
Score: 18.00 Matches: 18  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 10.00% Indels: 0  
Gaps: 0  
US-10-023-182-1 (1-752) x ADD35557 (1-18)  
QY 360 GAGCTGCGCCGAGGAGCTGCGCCAGATGCCACCGCTTCCCTGCCAGGG 413  
|||||

Db 1 GluteuAlaArgSerLeuAlaGlnAspAlaProProLeuProValProGly 18  
RESULT 59  
ADD35555  
ID ADD35555 standard; peptide; 18 AA.  
XX  
AC ADD35555;  
XX  
DT 15-JAN-2004 (first entry)  
XX  
DE Human NY-ESO-1 peptide SEQ ID NO:5.  
XX  
XX human leukocyte antigen; HLA; cytolytic T cell stimulator;  
KM immune response; cytostatic; gene therapy; human; NY-ESO-1;  
KW immunogenic tumour antigen.  
XX  
OS Homo sapiens.  
XX  
XX MO2003068800-A2.  
XX  
XX 21-AUG-2003.  
XX  
XX 12-FEB-2003; 2003WO-US004182.  
XX  
XX 13-FEB-2002; 2002US-0355828P.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX  
XX Jager E, Knuth A, Old L, Gnjaetic S;  
XX  
XX WPI; 2003-902684/82.  
XX  
XX New isolated peptide that binds to an HLA molecule, useful for treating a  
PT subject with a disorder characterized by the presence of complexes of an  
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune  
PT response.  
XX  
XX  
XX Claim 14; SEQ ID NO 5; 73pp; English.  
XX  
XX The present invention describes an isolated peptide (1) consisting of 8-  
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-  
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for  
CC complexes of the peptide and the HLA molecule, where at least 8  
CC contiguous amino acids of the peptide consist of at least 8 contiguous  
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also  
CC described: (1) a composition comprising (1) and a carrier; (2) an  
CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an  
CC expression vector comprising the nucleic acid of (2) in operable linkage  
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
CC isolated tetramer comprising the HLA molecule, biotin and a binding  
CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
CC inducing an immune response in a subject; (12) treating a subject with a  
CC disorder characterised by the presence of complexes of an HLA molecule  
CC and the peptide; (13) a combinatorial library of derivatives of (1),  
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
CC for an analogue of (1); (15) an isolated antibody or its fragment that  
CC specifically binds a HLA-peptide complex, or (1); (16) an isolated  
CC soluble T cell receptor that specifically binds to a HLA-peptide complex;  
CC and (17) inducing an immune response on a subject having a disorder  
CC characterised by the presence of the HLA molecule and the peptide. (1)  
CC has cytostatic activity, and can be used in gene therapy. The peptides,  
CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
CC useful for treating a subject with a disorder characterised by the  
CC presence of complexes of an HLA molecule and the peptide, and for  
CC inducing an immune response. The present sequence represents a human NY-  
CC ESO-1 peptide, which is used in the exemplification of the present  
CC invention. NY-ESO-1 is an immunogenic tumour antigen.  
XX  
XX Sequence 18 AA;  
XX

Alignment Scores:  
Pred. No.: 44.1  
Score: 18.00  
Percent Similarity: 100.00%  
Best Local Similarity: 100.00%  
Query Match: 10.00%  
DB: 1  
Gaps: 0  
US-10-023-182-1 (1-752) x ADD35555 (1-18)  
Qy 306 AGCGCCCTTGAGTTCTACCTGCCATGCCCTTGCAGACACCCATGAGACA 359  
Db 1 SerHrgLeuLeuGluIupheTyrlLeuAlaMetProPheAlaThrProMetGluAla 18  
|||||  
RESULT 60  
ADD35556  
ID ADD35556 standard; peptide; 18 AA.  
XX  
AC ADD35556;  
XX  
XX 15-JAN-2004 (first entry)  
XX  
XX  
XX Human NY-ESO-1 peptide SEQ ID NO:6.  
XX  
XX human leukocyte antigen; HLA; cytolytic T cell stimulator;  
KM immune response; cytostatic; gene therapy; human; NY-ESO-1;  
KW immunogenic tumour antigen.  
XX  
XX Homo sapiens.  
XX  
XX OS  
XX  
XX MO2003068800-A2.  
XX  
XX 21-AUG-2003.  
XX  
XX 12-FEB-2003; 2003WO-US004182.  
XX  
XX 13-FEB-2002; 2002US-0355828P.  
XX  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX  
XX Jager E, Knuth A, Old L, Gnjaetic S;  
XX  
XX WPI; 2003-902684/82.  
XX  
XX New isolated peptide that binds to an HLA molecule, useful for treating a  
PT subject with a disorder characterized by the presence of complexes of an  
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune  
PT response.  
XX  
XX  
XX Claim 14; SEQ ID NO 6; 73pp; English.  
XX  
XX The present invention describes an isolated peptide (1) consisting of 8-  
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-  
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for  
CC complexes of the peptide and the HLA molecule, where at least 8  
CC contiguous amino acids of the peptide consist of at least 8 contiguous  
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also  
CC described: (1) a composition comprising (1) and a carrier; (2) an  
CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an  
CC expression vector comprising the nucleic acid of (2) in operable linkage  
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
CC isolated tetramer comprising the HLA molecule, biotin and a binding  
CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
CC inducing an immune response in a subject; (12) treating a subject with a  
CC disorder characterised by the presence of complexes of an HLA molecule  
CC and the peptide; (13) a combinatorial library of derivatives of (1),  
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
CC for an analogue of (1); (15) an isolated antibody or its fragment that

CC specifically binds a HLA/peptide complex, or (1); (16) an isolated  
 CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
 CC and (17) inducing an immune response on a subject having a disorder  
 CC characterised by the presence of the HLA molecule and the peptide. (1)  
 CC has cytostatic activity, and can be used in gene therapy. The peptides,  
 CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
 CC useful for treating a subject with a disorder characterised by the  
 CC presence of complexes of an HLA molecule and the peptide, and for  
 CC inducing an immune response. The present sequence represents a human NY-  
 CC ESO-1 peptide, which is used in the exemplification of the present  
 CC invention. NY-ESO-1 is an immunogenic tumour antigen.

XX  
 SQ Sequence 18 AA;

#### Alignment Scores:

| Pred. No.:             | 44.1    | Length:       | 18 |
|------------------------|---------|---------------|----|
| Score:                 | 18.00   | Matches:      | 18 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 10.00%  | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x ADD35556 (1-18)

QY 324 TACCTGCCATGCTTTGCGGACCCATGAGAGAGCTGCGCGAGAGC 377  
 DB 1 TyrLeuAlaMetProPheAlaThrProMetGluAlaGluLeuAlaArgArgSer 18

#### RESULT 61

AAE07719  
 ID AAE07719 standard; peptide; 17 AA.

AC AAE07719;

DT 06-NOV-2001 (first entry)

XX Human NY ESO-1 MHC class II restricted T cell epitope #5.

XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
 KM class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
 KM NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
 KM tumour-specific humoral-mediated immunity; cancer; cytostatic;  
 KM immunotherapy.

XX Homo sapiens.

PN WO200155393-A2.

XX 02-AUG-2001.

XX 26-JAN-2001; 2001WO-US002765.

XX 28-JAN-2000; 2000US-0179004P.

PR 29-SEP-2000; 2000US-0237107P.

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

XX Wang R, Rosenberg SA, Zeng G;

XX WPI; 2001-496851/54.

PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
 PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
 PT protection from metastasis.

XX Claim 4; Page 16; 134pp; English.

XX The invention relates to the identification and isolation of major  
 CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
 CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
 CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
 CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
 CC restricted. The products of the gene are promising candidates for

CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
 CC of patients with cancer. The cancer epitopes are useful as immunogen and  
 CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
 CC lymphocytes resulting in protection of the recipient from development of  
 CC cancer and protection from metastasis, or by inhibiting the growth of  
 CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
 CC useful as diagnostic agent to detect the presence of cancer, to enhance  
 CC the generation of antibody and/or CD8+ T cell responses against any given  
 CC target antigen and/or happen and to induce tumour-specific humoral-  
 CC mediated immunity against cancer. The present sequence is MHC class II  
 CC restricted T cell epitope of human NY ESO-1 protein

XX  
 SQ Sequence 17 AA;

#### Alignment Scores:

| Pred. No.:             | 52.6    | Length:       | 17 |
|------------------------|---------|---------------|----|
| Score:                 | 17.00   | Matches:      | 17 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 9.44%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAE07719 (1-17)

QY 390 GCCCCACCGCTTCCCGTGCCAGGCGTGCTTGAAGAGTTCACTGTGTC 440  
 DB 1 AlaProPheLeuProValProGlyValLeuLeuysGluPheThrValSer 17

#### RESULT 62

AAE07753  
 ID AAE07753 standard; peptide; 17 AA.

AC AAE07753;

DT 06-NOV-2001 (first entry)

XX Human NY ESO-1 peptide #6 to characterise epitope recognised by T84-1.

XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
 KM class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
 KM NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
 KM tumour-specific humoral-mediated immunity; cancer; cytostatic;  
 KM immunotherapy.

XX Homo sapiens.

PN WO200155393-A2.

XX 02-AUG-2001.

XX 26-JAN-2001; 2001WO-US002765.

XX 28-JAN-2000; 2000US-0179004P.

PR 29-SEP-2000; 2000US-0237107P.

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

XX Wang R, Rosenberg SA, Zeng G;

XX WPI; 2001-496851/54.

PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
 PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
 PT protection from metastasis.

XX Example 6; Fig 6A; 134pp; English.

XX The invention relates to the identification and isolation of major  
 CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
 CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
 CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
 CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
 CC restricted. The products of the gene are promising candidates for

CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by T24-1  
XX  
SQ Sequence 17 AA;  
  
Alignment Scores:  
Pred. No.: 52.6 Length: 17  
Score: 17.00 Matches: 17  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 9.44% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07735 (1-17)  
Qy 393 CCACCGCTTCCCGTCCAGGGATCTTCTGAAGAGTTCAGTGTCCGCGC 443  
Db 1 ProthleuprovalProglValleuLeuylsGluPheThrValSerGly 17  
  
RESULT 63  
AAE07735  
ID AAE07735 standard; peptide; 17 AA.  
XX  
AC AAE07735;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #19.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 4; Page 17; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP

CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
SQ Sequence 17 AA;  
  
Alignment Scores:  
Pred. No.: 52.6 Length: 17  
Score: 17.00 Matches: 17  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 9.44% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07735 (1-17)  
Qy 474 GACACCGCCACAGTGCAGCTCTCATCAGCTCCGTCGACAGAGTTCC 524  
Db 1 Asph18Arg18InleuGlnleuSer11SerSerCysleuGlnGlnleuSer 17  
  
RESULT 64  
AAE07738  
ID AAE07738 standard; peptide; 17 AA.  
XX  
AC AAE07738;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #22.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 4; Page 17; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP

CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein

SQ Sequence 17 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 52.6    | Length:       | 17 |
| Score:                 | 17.00   | Matches:      | 17 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 9.44%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAE07738 (1-17)

OY 543 CAGTCCCTTTCGCCCCGTTGCTCAGCCTCCCTCAGGCGAGCGC 593  
DB 1 GInCysPheLeuProValPheLeuAlaGlnProPserGlyGlnArgArg 17

RESULT 65

AAE07779  
ID AAE07779 standard; peptide; 16 AA.

AC AAE07779;

XX 06-NOV-2001 (first entry)

DT Human NY ESO-1 peptide #13 to characterise epitope recognised by TE4-1.

DE Human NY ESO-1 peptide #13 to characterise epitope recognised by TE4-1.

XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;  
XX immunotherapy.

OS Homo sapiens.

XX WO200155393-A2.

PN 02-AUG-2001.

PD 02-AUG-2001.

PF 26-JAN-2001; 2001WO-US002765.

XX 28-JAN-2000; 2000US-0179004P.

PR 29-SEP-2000; 2000US-0237107P.

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

PA Wang R, Rosenberg SA, Zeng G;

PI WPI, 2001-496851/54.

DR New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
XX useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
XX protection from metastasis.

PS Example 6; Fig 6A; 134bp; English.

XX The invention relates to the identification and isolation of major  
XX histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
XX epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
XX from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
XX antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP

CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by TE4-1

SQ Sequence 16 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 62.3    | Length:       | 16 |
| Score:                 | 16.00   | Matches:      | 16 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 8.89%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAE07779 (1-16)

OY 396 CCGCTCCCGTGCAGGAGGTCCTTCTGAAGAGTTCACTGTGCGCGC 443  
DB 1 ProLeuProValProGlyValLeuLeuLysGlnuherhValSerGly 16

RESULT 66

AAE07720  
ID AAE07720 standard; peptide; 16 AA.

AC AAE07720;

XX 06-NOV-2001 (first entry)

DT Human NY ESO-1 MHC class II restricted T cell epitope #6.

DE Human NY ESO-1 MHC class II restricted T cell epitope #6.

XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;  
XX immunotherapy.

OS Homo sapiens.

XX WO200155393-A2.

PN 02-AUG-2001.

PD 02-AUG-2001.

PF 26-JAN-2001; 2001WO-US002765.

XX 28-JAN-2000; 2000US-0179004P.

PR 29-SEP-2000; 2000US-0237107P.

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

PA Wang R, Rosenberg SA, Zeng G;

PI WPI, 2001-496851/54.

DR New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
XX useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
XX protection from metastasis.

PS Claim 4; Page 16; 134bp; English.

XX The invention relates to the identification and isolation of major  
XX histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
XX epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
XX from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte

CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
SQ Sequence 16 AA;  
  
Alignment Scores:  
Pred. No.: 62.3 Length: 16  
Score: 16.00 Matches: 16  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.89% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07720 (1-16)  
  
QY 390 GCCCAGCGCTTCCCGGCCAGGGGTGTTCTGAAGAGTCACTGCG 437  
Db 1 AlalProleuProValProGlyValLeuLeuysgluPheThrVal 16  
  
RESULT 67  
AAV05978  
ID AAV05978 standard; peptide: 15 AA.  
XX  
AC AAV05978;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide.  
XX  
KW NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine.  
XX  
OS Homo sapiens.  
XX  
PN MO9918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PS Claim 15; Page 64; 88pp; English.  
XX  
The present sequence represents a cancer peptide that corresponds to  
CC amino acid residues 48-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see  
CC AAY05965), a new and potent tumour antigen capable of eliciting an  
CC antigen specific immune response by T cells. Cancer peptides derived from  
CC CAG-3 ORF1, CAG-3 ORF2 (see AAY05966), portions of them and their

CC variants (see AAY05967-87), are useful as cancer vaccines that protect  
CC against cancer. The invention provides: vectors and host cells (also  
CC, useful as vaccines); a method of diagnosis of cancer or precancer; a  
CC transgenic animal; antisense oligonucleotides that inhibit expression of  
CC the cancer peptide or tumour antigen; antibodies reacting with a CAG-3  
CC cancer peptide, useful in diagnostic and detection assays; and methods  
CC for preventing or inhibiting cancer by administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is  
CC treated by inducing cancer-specific T cells in vitro for subsequent  
CC return to a patient  
XX  
SQ Sequence 15 AA;  
  
Alignment Scores:  
Pred. No.: 73.5 Length: 15  
Score: 15.00 Matches: 15  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.33% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAY05978 (1-15)  
  
QY 195 GCAGGGGACGACGAGGCGCTTCGGGCGCGGAGAGCGCCCGCGG 239  
Db 1 AlaglYalAlaAlaArgAlaSerGlyProGlyGlyValaProArg 15  
  
RESULT 68  
AAU01550  
ID AAU01550 standard; peptide: 15 AA.  
XX  
AC AAU01550;  
XX  
DT 18-JUL-2001 (first entry)  
XX  
DE Human NY-ESO-1 tumour rejection antigen precursor peptide #5.  
XX  
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC class II;  
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;  
KW human leukocyte antigen-determining region; disease progression;  
KW disease regression; disease onset; body tissue; body fluid; enzyme label;  
KW radioactive label; monoclonal antibody.  
XX  
OS Homo sapiens.  
XX  
PN MO200123560-A2.  
XX  
PD 05-APR-2001.  
XX  
PF 26-SEP-2000; 2000WO-US026411.  
XX  
PR 29-SEP-1999; 99US-00408036.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Tureci O, Sahin U, Pfeundschnuh M;  
XX  
DR WPI; 2001-266156/27.  
XX  
PT Polypeptides binding to major histocompatibility complex class II human  
XX leukocyte antigen-determining region molecule having amino acid sequence  
XX found in tumor rejection antigen precursor used for stimulating  
XX proliferation of helper T cells.  
XX  
PS Claim 5; Page 38; 62pp; English.  
XX  
The sequence represents a human NY-ESO-1 tumour rejection antigen  
CC precursor fragment. NY-ESO-1 and SSX-2 polypeptides, or fragments of,  
CC bind to major histocompatibility complex (MHC) Class II molecules such as

CC human leukocyte antigen-determining region (HLA-DR) molecules and  
CC stimulate proliferation of helper T cells. The peptides can be  
CC administered to an HLA-DR positive subject in order to stimulate the  
CC helper T cells. An MHC class II HLA-DR-NY-ESO-1/SSX-2 complex expressed  
CC on the surface of a cell or present in free form is useful for this  
CC stimulation. The nucleic acid is useful for screening for a cancerous  
CC condition, which involves contacting a subject sample to a cell line  
CC transfected with the immunoreactive cell (helper T cell), where  
CC interaction is indicative of cancer. In addition, a sample from a patient  
CC (for example, a body fluid or tissue) can be monitored for the amount of  
CC the complex present in the bloodstream. This is useful for determining  
CC regression, progression or onset of a cancerous condition. The method  
CC involves contacting the sample with a radioactive labeled or enzyme  
CC labelled monoclonal antibody which specifically binds with the complex  
XX  
SQ Sequence 15 AA;  
  
Alignment Scores:  
Pred. No.: 73.5 Length: 15  
Score: 15.00 Matches: 15  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.33% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAU01550 (1-15)  
QY 549 TTTGCGCCGTTGTTTGGCTCAGGCTCCCTCAGGGAGAGGCGC 593  
DB 1 PheLeuProValPheLeuAlaGlnProPheSerGlyGlnArgArg 15  
  
RESULT 69  
AAE07721  
ID AAE07721 standard; peptide; 15 AA.  
XX  
AC AAE07721;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #7.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leukocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PE 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 4; Page 16; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes

CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leukocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
SQ Sequence 15 AA;  
  
Alignment Scores:  
Pred. No.: 73.5 Length: 15  
Score: 15.00 Matches: 15  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.33% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07721 (1-15)  
QY 399 CTTCCCGGCGCAGGGGTCCTTGAGAGAGTTCACTGNGTCGGC 443  
DB 1 LeuProValPheGlyValLeuValGlnPheThrValSerGly 15  
  
RESULT 70  
AAE07726  
ID AAE07726 standard; peptide; 15 AA.  
XX  
AC AAE07726;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #12.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leukocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PE 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 4; Page 16; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes



CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein

XX  
SQ Sequence 15 AA;

Alignment Scores:  
Pred. No.: 73.5 Length: 15  
Score: 15.00 Matches: 15  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.33% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07726 (1-15)

QY 417 CTTCTGAAGAGTTCACGTGTGTCGCGCAACTACTGACTATCCGA 461  
Db 1 LeuLeuYsgIupheThrValSerGIyAsnIleLeuThrIleArg 15

RESULT 71  
AAE07780  
ID AAE07780 standard; peptide: 15 AA.  
XX  
AC AAE07780;  
XX  
XX 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #14 to characterise epitope recognised by TE4-1.  
XX  
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;  
XX immunotherapy.  
XX  
XX Homo sapiens.  
XX OS  
XX W0200155393-A2.  
XX PN  
XX PD 02-AUG-2001.  
XX  
XX 26-JAN-2001; 2001WO-US002765.  
XX PF  
XX 28-JAN-2000; 2000US-0179004P.  
XX PR 29-SEP-2000; 2000US-0237107P.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX PA  
XX Wang R, Rosenberg SA, Zeng G;  
XX PI  
XX WPI; 2001-496851/54.  
XX DR  
XX  
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
XX PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
XX PT protection from metastasis.  
XX  
XX Example 6; Fig 6A; 134pp; English.  
XX PS  
XX  
XX The invention relates to the identification and isolation of major  
XX CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
XX CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes

CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by TE4-1

XX  
SQ Sequence 15 AA;

Alignment Scores:  
Pred. No.: 73.5 Length: 15  
Score: 15.00 Matches: 15  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.33% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07780 (1-15)

QY 399 CTTCCCGTGCAGGGGTGCTTCTGAAGAGTTCACTGTGTCCGCGC 443  
Db 1 LeuProValProGIyValLeuLeuYsgIupheThrValSerGIy 15

RESULT 72  
AAE07727  
ID AAE07727 standard; peptide: 15 AA.  
XX  
XX AAE07727;  
XX  
XX 06-NOV-2001 (first entry)  
XX  
XX Human NY ESO-1 MHC class II restricted T cell epitope #13.  
XX  
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;  
XX immunotherapy.  
XX  
XX Homo sapiens.  
XX OS  
XX W0200155393-A2.  
XX PN  
XX PD 02-AUG-2001.  
XX  
XX 26-JAN-2001; 2001WO-US002765.  
XX PF  
XX 28-JAN-2000; 2000US-0179004P.  
XX PR 29-SEP-2000; 2000US-0237107P.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX PA  
XX Wang R, Rosenberg SA, Zeng G;  
XX PI  
XX WPI; 2001-496851/54.  
XX DR  
XX  
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
XX PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
XX PT protection from metastasis.  
XX  
XX Claim 4; Page 16; 134pp; English.  
XX PS  
XX  
XX The invention relates to the identification and isolation of major  
XX CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II

CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
XX  
SQ Sequence 15 AA;  
  
Alignment Scores:  
Pred. No.: 73.5 Length: 15  
Score: 15.00 Matches: 15  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.33% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07727 (1-15)  
  
QY 420 CTGAAGAGTTCACGTGTCGGCAACATACGACTATCGACTG 464  
Db 1 LeuLyuGSluPherhVrValSerGIyAnIlleuThrIlleArgLeu 15  
  
RESULT 73  
AAE07786  
ID AAE07786 standard; peptide: 15 AA.  
XX  
AC AAE07786;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #20 to characterise epitope recognised by TE4-1.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI, 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Example 6; Fig 6A; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II

CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by TE4-1  
XX  
XX  
SQ Sequence 15 AA;  
  
Alignment Scores:  
Pred. No.: 73.5 Length: 15  
Score: 15.00 Matches: 15  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.33% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07786 (1-15)  
  
QY 417 CTTCGAAGAGTTCACGTGTCGGCAACATACGACTATCGCA 461  
Db 1 LeuLyuGSluPherhVrValSerGIyAnIlleuThrIlleArg 15  
  
RESULT 74  
AAE07787  
ID AAE07787 standard; peptide: 15 AA.  
XX  
AC AAE07787;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #21 to characterise epitope recognised by TE4-1.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI, 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Example 6; Fig 6A; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major

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CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
CC
SQ Sequence 15 AA;

Alignment Scores:
Pred. No.: 73.5 Length: 15
Score: 15.00 Matches: 15
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 8.33% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07787 (1-15)

QY 420 CTGAGAGAGTCTACTGTGTCGGCAACATACTAGTATCCGACTG 464
Db 1 LeuYsgIuPhetrhVatSerGIYAsnIleuThrIleatGleu 15

RESULT 75
AAE07748
ID AAE07748 standard; peptide; 15 AA.
XX
AC AAE07748;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #1 to characterise epitope recognised by TE4-1.
XX
KM Human; major histocompatibility complex; MHC; vaccine; metastasis;
KM class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KM NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KM tumour-specific humoral-mediated immunity; cancer; cytostatic;
KM immunotherapy.
XX
OS Homo sapiens.
XX
PN W0200155393-A2.
XX
PD 02-AUG-2001.
XX
PE 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-017904P.
XX
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
```

```
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
CC
SQ Sequence 15 AA;

Alignment Scores:
Pred. No.: 73.5 Length: 15
Score: 15.00 Matches: 15
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 8.33% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07748 (1-15)

QY 390 GCCCACCAGCTCCCGTCCGAGGGGTCCTTCTGAGAGTTCAC 434
Db 1 AlaProProleuProValProGIYValLeuLeuYsgIuPhetr 15

RESULT 76
ADD71533
ID ADD71533 standard; peptide; 15 AA.
XX
AC ADD71533;
XX
DT 15-JAN-2004 (first entry)
XX
DE HLA-DP4 binding peptide ligand #95.
XX
KM cytosstatic; immunostimulant; immunosuppressive; neuroprotective;
KM antidiabetic; antiallergic; ligand; HLA-DP4; human leucocyte antigen;
KM immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;
KM diabetes; allergy; graft rejection.
XX
OS Synthetic.
XX
PN FR2830940-A1.
XX
PD 18-APR-2003.
XX
PE 17-OCT-2001; 2001FR-00013352.
XX
PR 17-OCT-2001; 2001FR-00013352.
XX
PR 17-OCT-2001; 2001FR-00013352.
XX
PA (COMS ) COMMISSARIAT ENERGIE ATOMIQUE.
XX
PA (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.
XX
PI Mailleere B, Castelli F, Buhot C, Georges B;
XX
DR WPI; 2003-395920/38.
XX
PT Process for selecting ligands for human leucocyte antigen DP4, useful as
PT immunomodulators for treating e.g. tumors, based on inhibition of
PT binding.
XX
PS Disclosure; SEQ ID NO 95; 70pp; French.
XX
```

CC The invention relates to a process for selecting ligands (A) of HLA  
CC (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4  
CC with a labelled peptide (II) in presence of different concentrations of  
CC test compounds; (b) separating complexes formed; (c) determining DP4-(I)  
CC complexes by measuring a signal from the label; and (d) selecting  
CC compounds having binding IC50 less than 1000 nM, corresponding to the  
CC concentration required to inhibit 50 % binding of (II). (I) has signal-to-  
CC noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause  
CC activation of T cells, or their energy. (A), or nucleic acid that encodes  
CC them, are useful as immunomodulators, including uses in vaccines against  
CC pathogens and tumor cells, also for treating autoimmune diseases  
CC (multiple sclerosis and type I diabetes), allergy and graft rejection.  
CC (A) are useful as reagents for diagnosing the immune status of an  
CC individual, while labelled complexes of DP4 with (A) are used to select  
CC antigen-specific CD4+ T cells. The method identifies ligands specific for  
CC HLA-DP4 and allows exact definition of the binding motif shared by DP4  
CC binding ligands. This sequence represents an example of a peptide ligand  
CC of the invention. The peptides are labelled (biotinylated) at their N-  
CC termin.

SQ Sequence 15 AA;

Alignment Scores:  
Pred. No.: 73.5 Length: 15  
Score: 15.00 Matches: 15  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 8.33% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADD71533 (1-15)

Qy 549 TTTCTGCCCGTGTGCTCAGCCTCCCTCAGGCGCAGAGCGC 593

Db 1 PheLeuProValPheLeuAlaGlnProProSerGlyGlnArgArg 15

RESULT 77

ID AAY05986 standard; peptide; 14 AA.

AC AAY05986;

XX 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide.

KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW Leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine.

XX Homo sapiens.

XX WO9918206-A2.

XX 15-APR-1999.

XX 21-SEP-1998; 98WO-US019609.

XX 08-OCT-1997; 97US-0061428P.

XX (USSH ) US DEPT HEALTH &amp; HUMAN SERVICES.

XX Wang RF, Rosenberg SA;

XX WPI; 1999-277270/23.

XX Cancer antigen NY ESO1/CAG-3.

XX Claim 25, Page 50; 88pp; English.

XX The present sequence represents a cancer peptide that corresponds to  
CC amino acid residues 49-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see  
CC AAY05986), a new and potent tumour antigen capable of eliciting an  
CC antigen specific immune response by T cells. Cancer peptides derived from  
CC CAG-3 ORF1, CAG-3 ORF2 (see AAY05986), portions of them and their  
CC variants (see AAY05967-87), are useful as cancer vaccines that protect  
CC against cancer. The invention provides: vectors and host cells (also  
CC useful as vaccines); a method of diagnosis of cancer or precancer; a  
CC transgenic animal; antisense oligonucleotides that inhibit expression of  
CC the cancer peptide or tumour antigen; antibodies reacting with a CAG-3  
CC cancer peptide, useful in diagnostic and detection assays; and methods  
CC for preventing or inhibiting cancer by administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is  
CC treated by inducing cancer-specific T cells in vitro for subsequent  
CC return to a patient

SQ Sequence 14 AA;

Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY05986 (1-14)

Qy 198 GGGCAGCAGAGGCGCTCGGCGCGGAGAGCGCCCGCGG 239

Db 1 GlyAlaAlaArgAlaSerGlyProGlyGlyAlaProArg 14

RESULT 78

ID AAY01549 standard; peptide; 14 AA.

AC AAY01549;

XX 18-JUL-2001 (first entry)

DE Human NY-ESO-1 tumour rejection antigen precursor peptide #4.

KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;  
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;  
KW human leukocyte antigen-determining region; disease progression;  
KW disease regression; disease onset; body tissue; body fluid; enzyme label;  
KW radioactive label; monoclonal antibody.

XX Homo sapiens.

XX WO200123560-A2.

XX 05-APR-2001.

XX 26-SEP-2000; 2000WO-US026411.

XX 29-SEP-1999; 99US-00408036.

XX (LUDW-) LUDWIG INST CANCER RES.

XX Tureci O, Sahin U, Pfeundeschuh M;

XX WPI; 2001-266156/27.

XX Polypeptides binding to major histocompatibility complex class II human  
XX leukocyte antigen-determining region molecule having amino acid sequence  
XX found in tumor rejection antigen precursor used for stimulating  
XX proliferation of helper T cells.

XX PS Claim 5; Page 38; 62pp; English.  
XX  
CC The sequence represents a human NY-ESO-1 tumour rejection antigen  
CC precursor fragment. NY-ESO-1 and SSX-2 polypeptides, or fragments of,  
CC bind to major histocompatibility complex (MHC) Class II molecules such as  
CC human leukocyte antigen-determining region (HLA-DR) molecules and  
CC stimulate proliferation of helper T cells. The peptides can be  
CC administered to an HLA-DR positive subject in order to stimulate the  
CC helper T cells. An MHC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed  
CC on the surface of a cell or present in free form is useful for this  
CC stimulation. The nucleic acid is useful for screening for a cancerous  
CC condition, which involves contacting a subject sample to a cell line  
CC transfected with the immunoreactive cell (helper T cell), where  
CC interaction is indicative of cancer. In addition, a sample from a patient  
CC (for example, a body fluid or tissue) can be monitored for the amount of  
CC the complex present in the bloodstream. This is useful for determining  
CC regression, progression or onset of a cancerous condition. The method  
CC involves contacting the sample with a radioactive labelled or enzyme  
CC labelled monoclonal antibody which specifically binds with the complex  
XX  
SQ Sequence 14 AA;  
XX  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
XX  
US-10-023-182-1 (1-752) x AAU01549 (1-14)  
OY 306 AGCGCGCTTGCTTGAAGTTCTACCTGCGCATGCGCTTTCGGGACA 347  
DB 1 SerArgLeuGluInpHeTyTLeuAlaMetProPheAlaThr 14  
XX  
RESULT 79  
AAE07762  
ID AAE07762 standard; peptide: 14 AA.  
XX  
AC AAE07762;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human HLA-DP restricted T cell epitope #6 of NY ESO-1 protein.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.

XX PS Claim 65; Page 82; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human HLA-DP  
CC restricted T cell epitope of NY ESO-1 protein  
XX  
SQ Sequence 14 AA;  
XX  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
XX  
US-10-023-182-1 (1-752) x AAE07762 (1-14)  
OY 534 TGGATCAGCGAGTGCTTCTGCGCGTGTCTTTGGCTCAGCCT 575  
DB 1 TprIleThrgInGcYSpHeuAlProValPheLeuAlaGlnPro 14  
XX  
RESULT 80  
AAE07740  
ID AAE07740 standard; peptide: 14 AA.  
XX  
AC AAE07740;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #24.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.

```
XX Claim 4; Page 17; 134pp; English.
PS
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
CC
SQ Sequence 14 AA;

Alignment Scores:
Pred. No.: 86.2 Length: 14
Score: 14.00 Matches: 14
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 7.78% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07740 (1-14)

OY 546 TGCTTTGCGCCGTTTGGCTCAGCCTCCCTCAGGCGAG 587
DB 1 CysPheLeuPProValPheLeuAlaGlnProPProSerGlyGln 14

RESULT 81
AAE07772
ID AAE07772 standard; peptide; 14 AA.
XX
AC AAE07772;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #8.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
```

```
XX Example 12; Fig 11A; 134pp; English.
PS
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide. This peptide is tested for its ability to stimulate TE4-2 T
CC cells
CC
SQ Sequence 14 AA;

Alignment Scores:
Pred. No.: 86.2 Length: 14
Score: 14.00 Matches: 14
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 7.78% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07772 (1-14)

OY 543 CAGTGTTCGCGCCGTTTGGCTCAGCCTCCCTCAGG 584
DB 1 GlnCysPheLeuPProValPheLeuAlaGlnProPProSerGly 14

RESULT 82
AAE07788
ID AAE07788 standard; peptide; 14 AA.
XX
AC AAE07788;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #22 to characterise epitope recognised by TE4-1.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
```

```
PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TB4-1
XX
SQ Sequence 14 AA;
XX
Alignment Scores:
Pred. No.: 86.2 Length: 14
Score: 14.00 Matches: 14
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 7.78% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAE07764 (1-14)
QY 423 AAGAGGTTCACTGTGTCGCGCAGATCTGACTATCCGACTG 464
Db 1 LysglIuherhVslserGjYAsnIleleuhrIleargIeu 14
RESULT 83
AAE07764 ID AAE07764 standard; peptide; 14 AA.
XX
AC AAE07764;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human HLA-DP restricted T cell epitope #8 of NY ESO-1 protein.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PE 26-JAN-2001; 2001WO-US002765.
XX
PF 28-JAN-2000; 2000US-0179004P.
XX
PR 29-SEP-2000; 2000US-0237107P.
XX
PS (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
```

```
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 91; Page 20; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 14 AA;
XX
Alignment Scores:
Pred. No.: 86.2 Length: 14
Score: 14.00 Matches: 14
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 7.78% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAE07764 (1-14)
QY 513 CAGCAGCTTTCCTGTGATGATCAGCAGTGTCTTCTG 554
Db 1 GlngIneuSerIeuNeuMetTrpIleThrGInCyshetu 14
RESULT 84
AAE07722 ID AAE07722 standard; peptide; 14 AA.
XX
AC AAE07722;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 MHC class II restricted T cell epitope #9.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PE 26-JAN-2001; 2001WO-US002765.
XX
PF 28-JAN-2000; 2000US-0179004P.
XX
PR 29-SEP-2000; 2000US-0237107P.
XX
PS (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
```

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
XX  
PS Claim 4; Page 16; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
SQ Sequence 14 AA;  
XX  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07722 (1-14)  
QY 402 CCGGTGACAGGGGCTTCTGAAGAGTTCACTGTGTCCGC 443  
Db 1 ProValProGlyValIleuLeuLysGluPheThrValSerGly 14  
RESULT 85  
AAE07763  
ID AAE07763 standard; peptide; 14 AA.  
XX  
AC AAE07763;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human HLA-DP restricted T cell epitope #7 of NY ESO-1 protein.  
XX  
XX Human, major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
XX Homo sapiens.  
OS  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
XX  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
XX  
PS Claim 91; Page 20; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human HLA-DP  
CC restricted T cell epitope of NY ESO-1 protein  
XX  
SQ Sequence 14 AA;  
XX  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07763 (1-14)  
QY 537 ATCAAGCAGTCTTTTTCGCCGCTTTTGGCTGAGCTCC 578  
Db 1 IleThrGlnCysPheLeuProValPheLeuAlaGlnProPro 14  
RESULT 86  
AAE07766  
ID AAE07766 standard; peptide; 14 AA.  
XX  
AC AAE07766;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human HLA-DP restricted T cell epitope #10 of NY ESO-1 protein.  
XX  
XX Human, major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
XX Homo sapiens.  
OS  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
XX  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,



PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 91; Page 20; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human HLA-DP  
CC restricted T cell epitope of NY ESO-1 protein  
XX  
SQ Sequence 14 AA;  
XX  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07766 (1-14)  
QY 519 CTTTCCTGTGATGTGATCAGCGAGTCTTCTGCCGCTG 560  
Db 1 LeuSerLeuMetTrpIleThrGlnCysPheLeuProVal 14  
RESULT 87  
AAE07728  
ID AAE07728 standard; peptide; 14 AA.  
XX  
AC AAE07728;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #14.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
XX Homo sapiens.  
OS  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 4; Page 16; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
SQ Sequence 14 AA;  
XX  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07728 (1-14)  
QY 423 AAGAGTTCACTGTGTCCGCAACATCACTATCCGACTG 464  
Db 1 LysGluPheThrValSerGlyAenIleuThrIleArgLeu 14  
RESULT 88  
AAE07758  
ID AAE07758 standard; peptide; 14 AA.  
XX  
AC AAE07758;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 protein HLA-DP restricted T cell epitope, ESO p157-170.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
XX Homo sapiens.  
OS  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,

PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
PS Claim 72; Page 82; 134pp; English.  
XX  
XX The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human HLA-DP  
CC restricted T cell epitope of NY ESO-1 protein. This epitope is designated  
CC as wild type ESO p157-170  
XX  
XX Sequence 14 AA;  
SQ  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07758 (1-14)  
OY 522 TCCCTGTTGATGTCATACGCGATGCTTTTCGCCGCTTT 563  
Db 1 SerLeuLeuMetTrpIleThrGlnCysPheLeuProValPhe 14  
RESULT 89  
AAE07771  
ID AAE07771 standard; peptide; 14 AA.  
XX  
XX AAE07771;  
AC  
XX  
XX 06-NOV-2001 (first entry)  
DT  
XX  
XX Human NY ESO-1 peptide #7.  
DE  
XX  
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
XX Homo sapiens.  
OS  
XX  
XX WO20015393-A2.  
PN  
XX  
XX 02-AUG-2001.  
PD  
XX  
XX 26-JAN-2001; 2001WO-US002765.  
PF  
XX  
XX 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
PA  
XX  
XX Wang R, Rosenberg SA, Zeng G;  
PI  
XX  
XX WPI; 2001-496851/54.  
DR  
XX

PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
PS Example 12; Fig 11A; 134pp; English.  
XX  
XX The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide. This peptide is tested for its ability to stimulate T4-2 T  
CC cells  
XX  
XX Sequence 14 AA;  
SQ  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07771 (1-14)  
OY 540 ACGCAGTGTCTTTCGCCGCTTTTTCGCTCAGCCTCCCTCA 581  
Db 1 ThrGlnCysPheLeuProValPheLeuAlaGlnProProSer 14  
RESULT 90  
AAE07736  
ID AAE07736 standard; peptide; 14 AA.  
XX  
XX AAE07736;  
AC  
XX  
XX 06-NOV-2001 (first entry)  
DT  
XX  
XX Human NY ESO-1 MHC class II restricted T cell epitope #20.  
DE  
XX  
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
XX Homo sapiens.  
OS  
XX  
XX WO20015393-A2.  
PN  
XX  
XX 02-AUG-2001.  
PD  
XX  
XX 26-JAN-2001; 2001WO-US002765.  
PF  
XX  
XX 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
PA  
XX  
XX Wang R, Rosenberg SA, Zeng G;  
PI  
XX  
XX WPI; 2001-496851/54.  
DR  
XX

```
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
XX Claim 4; Page 17; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is MHC class II
CC restricted T cell epitope of human NY ESO-1 protein
XX
SQ Sequence 14 AA;
XX
Alignment Scores:
Pred. No.: 86.2 Length: 14
Score: 14.00 Matches: 14
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 7.78% Indels: 0
DB: 1 Gaps: 0
XX
US-10-023-182-1 (1-752) x AAE07736 (1-14)
XX
OY 474 GACCAAGCCCACTGAGCTTCATCAGCTCTGTCTCCAG 515
DB 1 AsphHisArgInLeuGlnLeuSerIleSerCysLeuGln 14
XX
RESULT 91
AAE07765 standard; peptide; 14 AA.
XX
AAE07765;
XX
06-NOV-2001 (first entry)
XX
DE Human HLA-DP restricted T cell epitope #9 of NY ESO-1 protein.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
XX
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
```

```
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
XX Claim 91; Page 20; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
SQ Sequence 14 AA;
XX
Alignment Scores:
Pred. No.: 86.2 Length: 14
Score: 14.00 Matches: 14
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 7.78% Indels: 0
DB: 1 Gaps: 0
XX
US-10-023-182-1 (1-752) x AAE07765 (1-14)
XX
OY 516 CAGGTTCCCTGTGATGAGATCAGCAGTTCGTTCCGC 557
DB 1 GlnLeuSerLeuLeuMetTrpIleHnGlnCysPheLeuPro 14
XX
RESULT 92
AAE07775 standard; peptide; 14 AA.
XX
AAE07775;
XX
06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #11.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
XX
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
```

```
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Example 12; Fig 11A; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide. This peptide is tested for its ability to stimulate T84-2 T  
CC cells  
XX  
SQ Sequence 14 AA;  
XX  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07775 (1-14)  
QY 504 TCCTGTCACAGAGCTTCCCTGTGATGATGATCAGCAG 545  
Db 1 SerCysLeuGlnGlnLeuSerLeuMetTrpIleThrGln 14  
RESULT 93  
AAE07749  
ID AAE07749 standard; peptide; 14 AA.  
XX  
AC AAE07749;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #2 to characterise epitope recognised by TE4-1.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
XX  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX
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DR WPI; 2001-496851/54.  
XX  
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Example 6; Fig 6A; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by TE4-1  
XX  
SQ Sequence 14 AA;  
XX  
Alignment Scores:  
Pred. No.: 86.2 Length: 14  
Score: 14.00 Matches: 14  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.78% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07749 (1-14)  
QY 390 GCCCACCAGCTCCCGTGCCAGGGGAGTCTGTAAGAGATTG 431  
Db 1 AlaProLeuProValProGlyValLeuLeuLysIleThr 14  
RESULT 94  
AAE07759  
ID AAE07759 standard; peptide; 14 AA.  
XX  
AC AAE07759;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human HLA-DP restricted T cell epitope #3 of NY ESO-1 protein.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
XX  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX
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```
XX DR WPI; 2001-496851/54.
XX
XX PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
XX PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
XX PT protection from metastasis.
XX
XX PS Claim 65; Page 82; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human HLA-DP
CC restricted T cell epitope of NY ESO-1 protein
XX
XX SQ Sequence 14 AA;
XX
XX Alignment Scores:
XX Pred. No.: 86.2 Length: 14
XX Score: 14.00 Matches: 14
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 7.78% Indels: 0
XX DB: 1 Gaps: 0
XX
US-10-023-182-1 (1-752) x AAE07759 (1-14)
XX
QY 525 CTGTTGATGTGATCAGCAGTGTCTTCTGCCCGTGTGTTTG 566
Db 1 LeuGlnGlnIleuSerLeuMetTrpIleThrGlnCysPheLeuProValPheLeu 14
XX
RESULT 95
AAE07773
ID AAE07773 standard; peptide; 14 AA.
XX
XX AAE07773;
XX
XX 06-NOV-2001 (first entry)
XX
XX DE Human NY ESO-1 peptide #9.
XX
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;
XX immunotherapy.
XX
XX Homo sapiens.
XX
XX WO200155393-A2.
XX
XX 02-AUG-2001.
XX
XX 26-JAN-2001; 2001WO-US002765.
XX
XX 28-JAN-2000; 2000US-0179004P.
XX 29-SEP-2000; 2000US-0237107P.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Wang R, Rosenberg SA, Zeng G;
XX
XX
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XX DR WPI; 2001-496851/54.
XX
XX PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
XX PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
XX PT protection from metastasis.
XX
XX PS Example 12; Fig 11A; 134pp; English.
XX
XX The invention relates to the identification and isolation of major
XX histocompatibility (MHC) class II restricted T cell epitope (MHC-II
XX epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
XX from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
XX antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
XX restricted. The products of the gene are promising candidates for
XX immunotherapeutic strategies for the prevention, treatment and diagnosis
XX of patients with cancer. The cancer epitopes are useful as immunogen and
XX vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
XX lymphocytes resulting in protection of the recipient from development of
XX cancer and protection from metastasis, or by inhibiting the growth of
XX cells expressing the NY-ESO-1 gene product. The cancer peptides are also
XX useful as diagnostic agent to detect the presence of cancer, to enhance
XX the generation of antibody and/or CD8+ T cell responses against any given
XX target antigen and/or happen and to induce tumour-specific humoral-
XX mediated immunity against cancer. The present sequence is human NY ESO-1
XX peptide. This peptide is tested for its ability to stimulate TE4-2 T
XX cells
XX
XX SQ Sequence 14 AA;
XX
XX Alignment Scores:
XX Pred. No.: 86.2 Length: 14
XX Score: 14.00 Matches: 14
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 7.78% Indels: 0
XX DB: 1 Gaps: 0
XX
US-10-023-182-1 (1-752) x AAE07773 (1-14)
XX
QY 510 CTCGACGACGCTTTCCCTGTTGATGTGATCAGCAGTGTCTT 551
Db 1 LeuGlnGlnIleuSerLeuMetTrpIleThrGlnCysPhe 14
XX
RESULT 96
AAE07774
ID AAE07774 standard; peptide; 14 AA.
XX
XX AAE07774;
XX
XX 06-NOV-2001 (first entry)
XX
XX DE Human NY ESO-1 peptide #10.
XX
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;
XX immunotherapy.
XX
XX Homo sapiens.
XX
XX WO200155393-A2.
XX
XX 02-AUG-2001.
XX
XX 26-JAN-2001; 2001WO-US002765.
XX
XX 28-JAN-2000; 2000US-0179004P.
XX 29-SEP-2000; 2000US-0237107P.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX
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XX Wang R, Rosenberg SA, Zeng G;
PI WPI; 2001-496851/54.
XX
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
XX protection from metastasis.
XX
XX Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
XX
XX SQ Sequence 14 AA;
XX
XX Alignment Scores:
XX Pred. No.: 86.2 Length: 14
XX Score: 14.00 Matches: 14
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 7.78% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAE07781 (1-14)
XX
XX QY 402 CCCGTCAGGGGTCCTTCTGAAGAGTTCACGTGTCGCGC 443
XX |||||
XX 1 ProValProGlyValLeuLeuLysGluPheThrValSerGly 14
XX
XX RESULT 99
XX ID AAY05985 standard; peptide; 13 AA.
XX AC AAY05985;
XX
XX DT 16-AUG-1999 (first entry)
XX
XX DE Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.
XX
XX KM NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine.
XX
XX OS Homo sapiens.
XX
XX PN MO9918206-A2.
XX
XX PD 15-APR-1999.
XX
XX PF 21-SEP-1998; 98WO-US019609.
XX
XX PR 08-OCT-1997; 97US-0061428P.
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XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX Wang RF, Rosenberg SA;
XX WPI; 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX
XX Disclosure; Page 12; 88pp; English.
XX
XX The present sequence represents a cancer peptide that corresponds to
XX amino acid residues 15-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see
XX AAY05966), a new and potent tumour antigen capable of eliciting an
XX antigen specific immune response by T cells. Cancer peptides derived from
XX CAG-3 ORF2, CAG-3 ORF1 (see AAY05965), portions of them and their
XX variants (see AAY05967-87), are useful as cancer vaccines that protect
XX against cancer. The invention provides: vectors and host cells (also
XX useful as vaccines); a method of diagnosis of cancer or precancer; a
XX transgenic animal; antisense oligonucleotides that inhibit expression of
XX the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
XX cancer peptide, useful in diagnostic and detection assays; and methods
XX for preventing or inhibiting cancer by administering a cancer peptide,
XX with or without an HLA molecule. The cancer peptides form part of, or are
XX derived from, cancers such as primary or metastatic melanoma, thymoma,
XX lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
XX cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
XX as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
XX treated by inducing cancer-specific T cells in vitro for subsequent
XX return to a patient
XX
XX SQ Sequence 13 AA;
XX
XX Alignment Scores:
XX Pred. No.: 101 Length: 13
XX Score: 13.00 Matches: 13
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 7.22% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAY05985 (1-13)
XX
XX QY 136 GGGGCAATGCTGGCGCGCCAGAGAGCGGGTGCACCG 174
XX |||||
XX 1 GlyAlaMetLeuValAlaIaGlnGluArgValProArg 13
XX
XX RESULT 100
XX ID AAY06064 standard; peptide; 13 AA.
XX AC AAY06064;
XX
XX DT 16-AUG-1999 (first entry)
XX
XX DE Human cancer antigen NY ESO-1/CAG-3 peptide.
XX
XX KM NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; cytotoxic T lymphocyte; CTL.
XX
XX OS Homo sapiens.
XX
XX PN MO9918206-A2.
XX
XX PD 15-APR-1999.
XX
XX PF 21-SEP-1998; 98WO-US019609.
XX
XX
```

```
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 11; Page 50; 88pp; English.
XX
CC This peptide corresponds to amino acid residues 50-62 of human NY ESO-
CC 1/CAG-3 ORP1 (see AAY05965), a new and potent tumour antigen that is
CC capable of eliciting an antigen specific immune response by T cells.
CC Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3
CC and their variants, are useful as cancer vaccines. A claimed method of
CC preventing or inhibiting cancer involves administering a cancer peptide,
CC with or without an HLA molecule. The cancer peptides form part of, or are
CC derived from, cancers such as primary or metastatic melanoma, thymoma,
CC lymphoma, sarcoma, lung cancer, liver cancer, leukemia, uterine cancer,
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
CC as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 13 AA;
XX
Alignment Scores:
Pred. No.: 101 Length: 13
Score: 13.00 Matches: 13
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 7.22% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAY06064 (1-13)
OY 201 GCAGCAGGCGCTCGGGGCGGAGAGGCGCGCCGCG 239
Db 1 A1aA1aArgAlaSerGlyProGlyGlyAlaProArg 13
RESULT 101
AAE07750
ID AAE07750 standard; peptide; 13 AA.
XX
AC AAE07750;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #3 to characterise epitope recognised by TE4-1.
XX
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;
XX immunotherapy.
XX
XX Homo sapiens.
XX
XX MO200155393-A2.
XX
XX 02-AUG-2001.
XX
PD 26-JAN-2001; 2001WO-US002765.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
XX 29-SEP-2000; 2000US-0237107P.
XX
PR (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PA Wang R, Rosenberg SA, Zeng G;
XX
PI WPI; 2001-496851/54.
XX
DR
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```
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
XX Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer; to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or happen and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
XX by TE4-1
XX
SQ Sequence 13 AA;
XX
Alignment Scores:
Pred. No.: 101 Length: 13
Score: 13.00 Matches: 13
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 7.22% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAE07750 (1-13)
OY 390 GCCCACCAGCTTCCGTCGACGAGGCGTGTGAGAG 428
Db 1 A1aProProlLeuProValProGlyValLeuLeuysGlu 13
RESULT 102
AAE07776
ID AAE07776 standard; peptide; 13 AA.
XX
AC AAE07776;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #12.
XX
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;
XX immunotherapy.
XX
XX Homo sapiens.
XX
XX MO200155393-A2.
XX
XX 02-AUG-2001.
XX
PD 26-JAN-2001; 2001WO-US002765.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
XX 29-SEP-2000; 2000US-0237107P.
XX
PR (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PA Wang R, Rosenberg SA, Zeng G;
XX
PI WPI; 2001-496851/54.
XX
DR
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XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
XX Example 12; Fig 11A; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognized by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide. This peptide is tested for its ability to stimulate TR4-2 T  
CC cells  
XX  
SQ Sequence 13 AA;  
XX  
Alignment Scores:  
Pred. No.: 101 Length: 13  
Score: 13.00 Matches: 13  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.22% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07776 (1-13)  
QY 504 TCCGTGTCGACGAGCTTCCCTGTTGATGATGCAGC 542  
DB 1 SerCysLeuGlnGlnLeuSerLeuMetTrpIleThr 13  
RESULT 103  
AAE07737  
ID AAE07737 standard; peptide; 13 AA.  
XX  
AC AAE07737;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #21.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
OS  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US0002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX
```

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DR MPI; 2001-496851/54.  
XX ?  
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
XX Claim 4; Page 17; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognized by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
SQ Sequence 13 AA;  
XX  
Alignment Scores:  
Pred. No.: 101 Length: 13  
Score: 13.00 Matches: 13  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.22% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07737 (1-13)  
QY 483 CAACTGCAGCTTCGATCAGCTCCTGCTTCGACGAGCTT 521  
DB 1 GlnLeuGlnLeuSerIleSerCysLeuGlnGlnLeu 13  
RESULT 104  
AAE07723  
ID AAE07723 standard; peptide; 13 AA.  
XX  
AC AAE07723;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #9.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
OS  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US0002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX
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DR WPI: 2001-496851/54.  
XX  
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
XX  
PS Claim 4; Page 16; 134pp; English.  
XX  
XX The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
SQ Sequence 13 AA;  
  
Alignment Scores:  
Pred. No.: 101 Length: 13  
Score: 13.00 Matches: 13  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.22% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07723 (1-13)  
  
QY 405 GTGCCAGGGGCTCTCTGAAGAGTTCACTGTGCCGC 443  
Db 1 ValProGlyValLeuLeuylGluPheThrValSerGly 13  
  
RESULT 105  
AAE07782  
ID AAE07782 standard; peptide; 13 AA.  
XX  
AC AAE07782;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #16 to characterise epitope recognised by TE4-1.  
XX  
XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
XX class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
XX NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
XX tumour-specific humoral-mediated immunity; cancer; cytostatic;  
XX immunotherapy.  
XX  
OS Homo sapiens.  
XX  
XX WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
XX  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
XX Wang R, Rosenberg SA, Zeng G;  
XX  
XX

DR WPI: 2001-496851/54.  
XX  
XX New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
XX  
PS Example 6; Fig 6A; 134pp; English.  
XX  
XX The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
XX by TE4-1  
XX  
SQ Sequence 13 AA;  
  
Alignment Scores:  
Pred. No.: 101 Length: 13  
Score: 13.00 Matches: 13  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 7.22% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07782 (1-13)  
  
QY 405 GTGCCAGGGGCTCTCTGAAGAGTTCACTGTGCCGC 443  
Db 1 ValProGlyValLeuLeuylGluPheThrValSerGly 13  
  
RESULT 106  
AAV06065  
ID AAV06065 standard; peptide; 12 AA.  
XX  
AC AAV06065;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 peptide.  
XX  
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
XX vaccine; cytotoxic T lymphocyte; CTL.  
XX  
OS Homo sapiens.  
XX  
XX WO9918206-A2.  
XX  
PN 15-APR-1999.  
XX  
PD 21-SEP-1998; 98WO-US019609.  
XX  
PF 08-OCT-1997; 97US-0061428P.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
XX

|            |   |
|------------|---|
| PI         | Wang RF, Rosenberg SA;  |
| XX         |   |
| DR         | WPI: 1999-277270/23.  |
| XX         |   |
| PT         | Cancer antigen NY ESO1/CAG-3.   |
| XX         |   |
| PS         | Example 11; Page 50; 88pp; English.                                       |
| XX         |   |
| CC         | This peptide corresponds to amino acid residues 51-62 of human NY ESO-    |
| CC         | 1/CAG-3 ORP1 (see AA05965), a new and potent tumour antigen that is       |
| CC         | capable of eliciting an antigen specific immune response by T cells.      |
| CC         | Cancer peptides (see AA05967-87) derived from CAG-3, portions of CAG-3    |
| CC         | and their variants, are useful as cancer vaccines. A claimed method of    |
| CC         | preventing or inhibiting cancer involves administering a cancer peptide,  |
| CC         | with or without an HLA molecule. The cancer peptides form part of, or are |
| CC         | derived from, cancers such as primary or metastatic melanoma, thymoma,    |
| CC         | lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  |
| CC         | cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such   |
| CC         | as breast, prostate, ovarian, pancreatic and thyroid cancers              |
| XX         |   |
| SQ         | Sequence 12 AA;   |
|            |   |
|            | Alignment Scores:   |
|            | Pred. No.: 117 Length: 12   |
|            | Score: 12.00 Matches: 12  |
|            | Percent Similarity: 100.00% Conservative: 0                               |
|            | Best Local Similarity: 100.00% Mismatches: 0                              |
|            | Query Match: 6.67% Indels: 0  |
|            | DB: 1 Gaps: 0   |
| US         | US-10-023-182-1 (1-752) x AA05965 (1-12)                                  |
| OY         | 204 GCAGGGCCTCGGGGCGGAGAGAGCGCCCGCGG 239                                  |
|            |   |
| Db         | 1 A1aArgAlaSerGlyProGlyGlyAlaProArg 12                                    |
|            |   |
| RESULT 107 |   |
| ID         | AA05984   |
| AC         | AA05984 standard; peptide; 12 AA.   |
| XX         |   |
| XX         | AA05984;  |
| XX         |   |
| DT         | 16-AUG-1999 (first entry)   |
| XX         |   |
| DE         | Human cancer antigen NY ESO-1/CAG-3 ORP2 cancer peptide.                  |
| XX         |   |
| KW         | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |
| KW         | leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;         |
| KW         | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KW         | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KW         | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KW         | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |
| KW         | vaccine.  |
| OS         | Homo sapiens.   |
| XX         |   |
| PN         | WO918206-A2.  |
| XX         |   |
| PD         | 15-APR-1999.  |
| XX         |   |
| PF         | 21-SEP-1998; 98WO-US019609.   |
| XX         |   |
| PR         | 08-OCT-1997; 97US-0061428P.   |
| XX         |   |
| PA         | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| XX         |   |
| PI         | Wang RF, Rosenberg SA;  |
| XX         |   |
| DR         | WPI: 1999-277270/23.  |
| XX         |   |
| PT         | Cancer antigen NY ESO1/CAG-3.   |
| XX         |   |
| PS         | Disclosure; Page 12; 88pp; English.                                       |

|  |   |
|--|---|
| XX   | The present sequence represents a cancer peptide that corresponds to      |
| CC   | amino-acid residues 16-27 of human ESO-1/CAG-3 (or CAG-3)/ORF2 (see       |
| CC   | AAV05966), a new and potent tumour antigen capable of eliciting an        |
| CC   | antigen specific immune response by T cells. Cancer peptides derived from |
| CC   | CAG-3 ORF, CAG-3 ORF1 (see AAV05965), portions of them and their          |
| CC   | variants (see AAV05967-87), are useful as cancer vaccines that protect    |
| CC   | against cancer. The invention provides: vectors and host cells (also      |
| CC   | useful as vaccinees); a method of diagnosis of cancer or precancer; a     |
| CC   | transgenic animal; antisense oligonucleotides that inhibit expression of  |
| CC   | the cancer peptide or tumour antigen; antibodies reacting with a CAG-3    |
| CC   | cancer peptide, useful in diagnostic and detection assays; and methods    |
| CC   | for preventing or inhibiting cancer by administering a cancer peptide,    |
| CC   | with or without an HLA molecule. The cancer peptides form part of, or are |
| CC   | derived from, cancers such as primary or metastatic melanoma, thymoma,    |
| CC   | lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  |
| CC   | cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such   |
| CC   | as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is |
| CC   | treated by inducing cancer-specific T cells in vitro for subsequent       |
| CC   | return to a patient   |
| SQ   | Sequence 12 AA;   |
| Alignment Scores:                          |   |
| Pred. No.:                                 | 117 Length: 12  |
| Score:                                     | 12.00 Matches: 12   |
| Percent Similarity:                        | 100.00% Conservative: 0   |
| Best Local Similarity:                     | 100.00% Mismatches: 0   |
| Query Match:                               | 6.67% Indels: 0   |
| DB:  | 1 Gaps: 0   |
| US-10-023-182-1 (1-752) x AAV05984 (1-112) |   |
| OY   | 139 GCATGCTGCAGGCCACAGAGAGCGCGGTGCCACGG 174<br>     <br>                  |
| Db   | 1 AlameUleuAlaAIngInGuArGrVaIProArg 12                                    |
| RESULT 108                                 |   |
| AAE07724                                   |   |
| ID   | AAE07724 standard; peptide; 12 AA.  |
| XX   |   |
| AC   | AAE07724;   |
| XX   |   |
| DT   | 06-NOV-2001 (first entry)   |
| XX   |   |
| DE   | Human NY ESO-1 MHC class II restricted T cell epitope #10.                |
| XX   |   |
| KW   | Human; major histocompatibility complex; MHC; vaccine; metastasis;        |
| KW   | class II restricted T cell epitope; MHC-II epitope; cancer antigen;       |
| KW   | NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;        |
| KW   | tumour-specific humoral-mediated immunity; cancer; cytostatic;            |
| KW   | immunotherapy.  |
| XX   |   |
| OS   | Homo sapiens.   |
| XX   |   |
| PN   | WO200155393-A2.   |
| XX   |   |
| PD   | 02-AUG-2001.  |
| XX   |   |
| PF   | 26-JAN-2001; 2001WO-US002765.   |
| XX   |   |
| PR   | 28-JAN-2000; 2000US-017904P.  |
| XX   |   |
| PR   | 29-SEP-2000; 2000US-0237107P.   |
| XX   |   |
| PA   | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| XX   |   |
| PI   | Wang R, Rosenberg SA, Zeng G;   |
| XX   |   |
| DR   | WPI; 2001-496851/54.  |
| XX   |   |
| PT   | New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,     |
| PT   | useful as immunogen and vaccine for inhibiting cancer in a mammal or as   |
| PT   | protection from metastasis.   |

XX Claim 4, Page 16; 134pp; English.  
PS  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
CC  
SQ Sequence 12 AA;  
  
Alignment Scores:  
Pred. No.: 117 Length: 12  
Score: 12.00 Matches: 12  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.67% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07724 (1-12)  
QY 408 CCAGGCGTCTTCTGAAGAGTTCACTGTCGCGC 443  
DB 1 ProGlyValLeuLysGlnPheThrValSerGly 12  
  
RESULT 109  
AAE07783  
ID AAE07783 standard; peptide; 12 AA.  
AC AAE07783;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #17 to characterise epitope recognised by TE4-1.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.

XX Example 6; Fig 6A; 134pp; English.  
PS  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by TE4-1  
CC  
SQ Sequence 12 AA;  
  
Alignment Scores:  
Pred. No.: 117 Length: 12  
Score: 12.00 Matches: 12  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.67% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07783 (1-12)  
QY 408 CCAGGCGTCTTCTGAAGAGTTCACTGTCGCGC 443  
DB 1 ProGlyValLeuLysGlnPheThrValSerGly 12  
  
RESULT 110  
AAE07751  
ID AAE07751 standard; peptide; 12 AA.  
AC AAE07751;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #4 to characterise epitope recognised by TE4-1.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.

PT protection from metastasis.  
XX  
XX Example 6; Fig 6A; 134pp; English.  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer. To enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or happen and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by TE4-1  
XX  
XX Sequence 12 AA;  
SQ  
Alignment Scores:  
Pred. No.: 117 Length: 12  
Score: 12.00 Matches: 12  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.67% Indels: 0  
Gaps: 0  
US-10-023-182-1 (1-752) x AAE07751 (1-12)  
QY 390 GCCCCACCGCTTCCCGTGCAGGGGAGGCTTCTGAAG 425  
Db 1 AlaproteinProvalProglValleuleuulys 12  
RESULT 111  
AAW62585 standard; peptide; 11 AA.  
XX  
XX AAW62585;  
AC  
XX 17-SEP-1998 (first entry)  
DT  
XX  
XX Cancer associated antigen peptide.  
DE  
XX  
XX Cancer associated antigen; NY-ESO-1; regression; progression; onset;  
KW  
XX cancer; treatment; diagnosis.  
OS  
XX Synthetic.  
OS  
XX Homo sapiens.  
PN  
XX WO9814464-A1.  
PD  
XX 09-APR-1998.  
PF  
XX 15-SEP-1997; 97WO-US016335.  
XX  
XX 03-OCT-1996; 96US-00725182.  
PR  
XX (LUDWIG INST CANCER RES.  
PA  
XX  
XX Chen Y, Scanlan M, Gure A, Old LJ, Jager E, Knuth A;  
PI  
XX Drifflout JW;  
XX  
XX WPI: 1998-286417/25.  
DR  
XX  
XX  
XX New isolated cancer associated antigen - is used to develop products for  
PT the diagnosis and treatment of cancers and for monitoring cancer therapy.  
XX

PS Claim 33; Page 17; 49pp; English.  
XX  
XX Peptides AAW62585-87 are derived from cancer associated antigen NY-ESO-1,  
CC and are stimulators of cytotoxic T-cells. The specification describes a  
CC method for determining regression, progression of onset of a cancerous  
CC condition, comprising monitoring a sample from a patient with the  
CC cancerous condition for a parameter selected from NY-ESO-1 protein, a  
CC peptide derived from NY-ESO-1 protein and cytolytic T cells specific for  
CC the peptide and an MHC molecule with which it non-covalently complexes.  
CC Methods for the treatment of a cancerous condition are also described.  
CC The NY-ESO-1 protein and peptides derived from it can be used for  
CC diagnosis and treatment of cancers and to monitor the efficacy of a  
CC therapeutic regime  
XX  
SQ Sequence 11 AA;  
QY  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
Gaps: 0  
US-10-023-182-1 (1-752) x AAW62585 (1-11)  
QY 522 TCCTGTGATGTGATCAGCGAGTCTTCTG 554  
Db 1 Serleuueuueitriplertingincysphelu 11  
RESULT 112  
AAV05983  
ID AAV05983 standard; peptide; 11 AA.  
XX  
XX AAV05983;  
AC  
XX  
XX 16-AUG-1999 (first entry)  
DT  
XX  
XX Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.  
DE  
XX  
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW  
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW  
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW  
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW  
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW  
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW  
XX vaccine.  
OS  
XX Homo sapiens.  
OS  
XX  
XX WO9918206-A2.  
PN  
XX  
XX 15-APR-1999.  
PD  
XX  
XX 21-SEP-1998; 98WO-US019609.  
PF  
XX  
XX 08-OCT-1997; 97US-0061428P.  
PR  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
PA  
XX  
XX Wang RF, Rosenberg SA;  
PI  
XX  
XX WPI: 1999-277270/23.  
DR  
XX  
XX  
XX Cancer antigen NY ESO1/CAG-3.  
PT  
XX  
XX Disclosure; Page 12; 88pp; English.  
PS  
XX  
XX The present sequence represents a cancer peptide that corresponds to  
CC amino acid residues 17-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see  
CC AAV05966), a new and potent tumour antigen capable of eliciting an  
CC antigen specific immune response by T cells. Cancer peptides derived from  
CC CAG-3 ORF2, CAG-3 ORF1 (see AAV05965), portions of them and their

CC variants (see AAY05967-87), are useful as cancer vaccines that protect  
CC against cancer. The invention provides: vectors and host cells (also  
CC useful as vaccines); a method of diagnosis of cancer or precancer; a  
CC transgenic animal; antisense oligonucleotides that inhibit expression of  
CC the cancer peptide or tumour antigen; antibodies reacting with a CAG-3  
CC cancer peptide, useful in diagnostic and detection assays; and methods  
CC for preventing or inhibiting cancer by administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is  
CC treated by inducing cancer-specific T cells in vitro for subsequent  
CC return to a patient

XX  
XX  
SQ Sequence 11 AA;

Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY05983 (1-11)

OY 142 ATGCTGGCGGCCGAGAGAGCGGTCGACAGG 174  
DB 1 MetLeuAlaAlaGlnGlnIuRgArGValProArg 11

RESULT 113  
AAY06068  
ID AAY06068 standard; peptide; 11 AA.

XX  
XX  
AC AAY06068;

XX  
XX  
DT 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 peptide.

XX  
XX  
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; cytotoxic T lymphocyte; CTL.

XX  
XX  
OS Homo sapiens.

XX  
XX  
PN WO9118206-A2.

XX  
XX  
PD 15-APR-1999.

XX  
XX  
PF 21-SEP-1998; 98WO-US019609.

XX  
XX  
PR 08-OCT-1997; 97US-0061428P.

XX  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.

XX  
XX  
PI Wang RF, Rosenberg SA;

XX  
XX  
DR WPI; 1999-277270/23.

XX  
XX  
PT Cancer antigen NY ESO1/CAG-3.

XX  
XX  
PS Example 11; Page 50; 88pp; English.

XX  
XX  
CC This peptide corresponds to amino acid residues 53-63 of human NY ESO-  
CC 1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is  
CC capable of eliciting an antigen specific immune response by T cells.  
CC Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3

CC and their variants, are useful as cancer vaccines. A claimed method of  
CC preventing or inhibiting cancer involves administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers

XX  
XX  
SQ Sequence 11 AA;

Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY06068 (1-11)

OY 210 GCCTCGGGGCCGAGAGAGCGGCCCGGGGT 242  
DB 1 AlaSerGlyProGlyGlyGlyAlaProArgGly 11

RESULT 114  
AAY06066  
ID AAY06066 standard; peptide; 11 AA.

XX  
XX  
AC AAY06066;

XX  
XX  
DT 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 peptide.

XX  
XX  
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; cytotoxic T lymphocyte; CTL.

XX  
XX  
OS Homo sapiens.

XX  
XX  
PN WO9118206-A2.

XX  
XX  
PD 15-APR-1999.

XX  
XX  
PF 21-SEP-1998; 98WO-US019609.

XX  
XX  
PR 08-OCT-1997; 97US-0061428P.

XX  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.

XX  
XX  
PI Wang RF, Rosenberg SA;

XX  
XX  
DR WPI; 1999-277270/23.

XX  
XX  
PT Cancer antigen NY ESO1/CAG-3.

XX  
XX  
PS Example 11; Page 50; 88pp; English.

XX  
XX  
CC This peptide corresponds to amino acid residues 52-62 of human NY ESO-  
CC 1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is  
CC capable of eliciting an antigen specific immune response by T cells.  
CC Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3  
CC and their variants, are useful as cancer vaccines. A claimed method of  
CC preventing or inhibiting cancer involves administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers

XX SQ Sequence 11 AA;  
Alignment Scores:  
Pred. No.: 134  
Score: 11.00  
Percent Similarity: 100.00%  
Best Local Similarity: 100.00%  
Query Match: 6.11%  
DB: 1  
Gaps: 0  
US-10-023-182-1 (1-752) x AAY06066 (1-11)  
QY 207 AGGCGCTCGGGGCGGAGAGCGCCCGCGG 239  
DB 1 ArgAlaserGlyProGlyGlyAlaProArg 11  
RESULT 115  
ID AAY01761 standard; peptide; 11 AA.  
XX AAY01761;  
AC AAY01761;  
XX 25-JUN-1999 (first entry)  
XX Exemplary antigenic peptide derived from NY-ESO-1.  
DE  
XX MAGE-3; tumour associated gene; human leucocyte antigen Class II;  
KW autologous CD4+ cell; MAGE-3 related disease; cancer; melanoma;  
KW osteosarcoma; leukemia; carcinoma.  
XX Homo sapiens.  
XX MO9914326-A1.  
XX 25-MAR-1999.  
XX PD  
XX PF 04-SEP-1998; 98WO-US018601.  
XX PR 12-SEP-1997; 97US-00928615.  
XX PA (LUDW-) LUDWIG INST CANCER RES.  
XX PA (UYVR-) UNIV VIRIE BRUSSEL.  
XX PI Thielemans K, Heirman C, Cortbals J, Chaux P, Stroobant V;  
PI Boon-Fallieur T, Van Der Bruggen P, Luiten R;  
XX WPI; 1999-244031/20.  
XX DR  
XX PT Isolated peptides that bind to human leucocyte antigen class II  
XX PT molecule.  
XX PS Disclosure; Page 29; 88pp; English.  
XX The present sequence represents an exemplary tumour associated peptide  
CC antigen. The specification describes a MAGE-3 tumour associated gene.  
CC Peptides (AA01721-25) that bind human leucocyte antigen (HLA) Class II  
CC molecules can be derived from the MAGE-3 protein. These peptides and  
CC autologous CD4+ cells that bind to a complex of MAGE-3 peptide and HLA  
CC Class II, are used to treat MAGE-3 related diseases, particularly cancers  
CC (e.g. melanoma, osteosarcoma, leukemia and various forms of carcinoma).  
CC The peptides are also used to produce specific antibodies. Detection of  
CC of the peptides, e.g. in binding assays, particularly with antibodies, is  
CC used for diagnosis of such diseases  
XX SQ Sequence 11 AA;  
Alignment Scores:  
Pred. No.: 134  
Score: 11.00  
Percent Similarity: 100.00%  
Best Local Similarity: 100.00%  
Query Match: 6.11%  
DB: 1  
Length: 11  
Matches: 11  
Conservative: 0  
Mismatch: 0  
Indels: 0

DB: 1  
Gaps: 0  
US-10-023-182-1 (1-752) x AAY01761 (1-11)  
QY 522 TCCCTGTTGATGATGATCAGCGAGTCTTCTG 554  
DB 1 SerLeuLeuMetTrypIleThrGlyCysPheLeu 11  
RESULT 116  
ID AAY52431 standard; peptide; 11 AA.  
XX AAY52431;  
AC AAY52431;  
XX 15-FEB-2000 (first entry)  
XX Human tumour antigen NY-ESO-1 peptide #4.  
DE  
XX Cancer; tumour; antigen; MHC; major histocompatibility complex; Class I;  
KW T-cell; cytotoxic; stimulation; proliferation; treatment; diagnosis;  
KW prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;  
KW hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.  
XX Synthetic.  
XX Homo sapiens.  
XX MO9953938-A1.  
XX PD  
XX PF 24-MAR-1999; 99WO-US006875.  
XX PR 17-APR-1998; 98US-00062422.  
XX PR 02-OCT-1998; 98US-00165546.  
XX PA (LUDW-) LUDWIG INST CANCER RES.  
XX PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
PI Gure A, Ritter G;  
XX WPI; 2000-038483/03.  
XX DR  
XX PT Novel peptides which bind to MHC class I and MHC class II molecules,  
XX PT useful for therapeutic and diagnostic purposes.  
XX PS Claim 60; Page 18; 49pp; English.  
XX Peptides #4-#7 (AAY52431-Y52434) are peptides derived from the human  
CC tumour antigen, NY-ESO-1 (AAY52430) which contain the motif LLMWIR  
CC (AAY52441). These sequences can bind to MHC (major histocompatibility  
CC Class I HLA-A2 molecules, thereby stimulating proliferation of cytotoxic  
CC T-cells. cDNA encoding NY-ESO-1 was initially isolated from an osteophagus  
CC squamous cell cancer cDNA library. Tissue localization studies revealed  
CC it to be expressed at high levels in normal ovary and testis but not in  
CC normal colon, kidney, liver, brain, oesophagus and skin. It was expressed  
CC in certain tumours and tumour cell lines with some degree of frequency -  
CC these included melanoma specimens and cell lines, and breast and bladder  
CC cancer specimens, with expression in other tumour types being sporadic.  
CC These NY-ESO-1-derived peptides may be used in methods and compositions  
CC used for the treatment, diagnosis and prevention of cancers (such as  
CC melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian  
CC cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the  
CC proliferation of T cells  
XX SQ Sequence 11 AA;  
Alignment Scores:  
Pred. No.: 134  
Score: 11.00  
Percent Similarity: 100.00%  
Best Local Similarity: 100.00%  
Query Match: 6.11%  
DB: 1  
Length: 11  
Matches: 11  
Conservative: 0  
Mismatch: 0  
Indels: 0

US-10-023-182-1 (1-752) x AAY52431 (1-11)

QY 522 TCCTGTGATGTGATCAGCAGTCTTCTG 554  
DB 1 SerLeuLeuMetTrpIleTnGlnCysPheLeu 11

RESULT 117  
AAB22790  
ID AAB22790 standard; peptide; 11 AA.  
XX  
AC AAB22790;  
XX  
DT 22-DEC-2000 (first entry)  
XX  
DE NY-ESO-1 peptide epitope, SEQ ID NO:1.  
XX  
KM NY-ESO-1; epitope; CTL response; cytotoxic T lymphocyte; vaccine;  
KW immunogenic; adjuvant coadministration; microbial infection;  
KW tuberculosis; HIV; hepatitis B virus; hepatitis C virus; cancer.  
XX  
OS Unidentified.  
XX  
PN WO200048630-A1.  
XX  
PD 24-AUG-2000.  
XX  
PF 17-FEB-2000; 2000WO-AU000110.  
XX  
PR 17-FEB-1999; 99AU-00008735.  
PR 27-JUL-1999; 99AU-00001861.  
XX  
PA (CSL-C) CSL LTD.  
XX  
PI Cox JC, Drane DP;  
XX  
DR WPI; 2000-571930/53.  
XX  
PT Immunogenic complexes comprising negatively charged organic carrier  
PT adjuvants and positively charged antigens for use as vaccines against  
PT microbial infection and cancer.  
XX  
PS Example 4; Fig 5a; 11pp; English.

XX The invention relates to a novel immunogenic complex comprising a charged  
CC organic carrier and a charged antigen which are electrostatically  
CC associated. The complex induces a cytotoxic T lymphocyte (CTL) response.  
CC The complex and/or vaccine can be used to treat a disease in a mammal,  
CC where the complex/vaccine elicits, induces or otherwise facilitates an  
CC immune response which inhibits, halts, delays or prevents the onset or  
CC progression of the disease condition. In particular, the disease is a  
CC condition resulting from a microbial infection or cancer. Microbial  
CC infections which may be treated using the immunogenic complex include  
CC human immunodeficiency virus (HIV), hepatitis B, hepatitis C,  
CC tuberculosis or a parasitic condition, and cancers which may be treated  
CC including melanoma, prostate cancer or breast cancer. The complexes and  
CC vaccines simultaneously co-deliver antigen and adjuvant to the same  
CC antigen presenting cell, which is often essential for induction of  
CC appropriate immune responses. Sequences AAB22790-B22791 represent peptide  
CC epitopes of the positively charged protein NY-ESO-1 used in an  
CC exemplification of the invention  
XX

SQ Sequence 11 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 134     | Length:       | 11 |
| Score:                 | 11.00   | Matches:      | 11 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 6.11%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAB22790 (1-11)

QY 522 TCCTGTGATGTGATCAGCAGTCTTCTG 554  
DB 1 SerLeuLeuMetTrpIleTnGlnCysPheLeu 11

RESULT 118  
AAY70855  
ID AAY70855 standard; peptide; 11 AA.  
XX  
AC AAY70855;  
XX  
DT 31-JUL-2000 (first entry)  
XX  
DE CTL epitope-1 of human CAMEL protein.  
XX  
KM CAMEL; CTL-recognised Antigen on Melanoma; cytotoxic T lymphocyte; CTL;  
KW tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;  
KW cancer; immunotherapy; immunogenic peptide; immune response.  
XX  
OS Homo sapiens.  
XX  
PN WO200023584-A1.  
XX  
PD 27-APR-2000.  
XX  
PF 15-OCT-1999; 99WO-EP007832.  
XX  
PR 16-OCT-1998; 98EP-00119583.  
XX  
PA (BOEH ) BOEHRINGER INGELHEIM INT GMBH.  
PA (UVHO-) UNIV HOSPITAL LEIDEN.  
XX  
PI Schrier PI, Aarnoudse CA, Heider K, Klade C;  
XX  
DR WPI; 2000-339685/29.  
XX  
PT Tumor-associated antigen useful for cancer immunotherapy is encoded by  
PT the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.  
XX  
PS Claim 4; Page 34; 73pp; English.

XX The present sequence is an immunogenic peptide of human tumour-associated  
CC antigen CAMEL (Cytotoxic T lymphocytes (CTL)-recognised Antigen on  
CC Melanoma). This peptide is a CTL epitope, that has the ability to elicit  
CC a CTL response. It corresponds to residues 1-11 of the CAMEL protein.  
CC CAMEL protein is encoded by the LAGE-1 gene, a tumour-specific antigen.  
CC It is different from the LAGE-1 protein, since it is translated from a  
CC different open reading frame (ORF-1). It shows strong homology with NY-  
CC ESO-1, a melanoma specific tumour antigen. The tumour-associated antigen  
CC displayed on melanoma cells is recognised by cytotoxic T lymphocytes.  
CC CAMEL is expressed in tumour cell lines, tumour tissues (e.g. breast and  
CC lung) and in restricted number of healthy tissues. This sequence has  
CC anticancer activity. CAMEL tumour antigen and immunogenic peptides  
CC derived from it are useful for cancer immunotherapy. They have the  
CC potential to induce an immune response, by eliciting a CTL response. The  
CC DNA molecule is used to construct recombinant or fusion proteins  
XX

SQ Sequence 11 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 134     | Length:       | 11 |
| Score:                 | 11.00   | Matches:      | 11 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 6.11%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAY70855 (1-11)

QY 94 ATGCTGATGGCCGAGAGCCCTGGCATTCCTG 126  
DB 1 MetLeuMetAlaGlnGlnAlaLeuAlaPheLeu 11



RESULT 119  
 ID AAY78469 standard; peptide; 11 AA.  
 AC AAY78469;  
 DT 10-MAY-2000 (first entry)  
 DE NY-ESO-1 derived peptide #1.  
 KM Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
 KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
 KW melanoma; synovial sarcoma.  
 OS Homo sapiens.  
 PN WO200000824-A1.  
 PD 06-JAN-2000.  
 PF 25-JUN-1999; 99WO-US014493.  
 PR 26-JUN-1998; 98US-00105839.  
 PA (LUDW-) LUDWIG INST CANCER RES.  
 P1 Tureci O, Sahin U, Pfeundschuh M, Rammensee G, Stevanovic S;  
 P2 Chen Y, Gure A, Old LJ;  
 DR WPI; 2000-170933/15.  
 PT Determining the possible presence of breast, endometrial, colorectal,  
 PT lung, bladder or head-neck cancer.  
 PS Example 12; Page 21; 40pp; English.  
 XX  
 CC A method has been developed for determining the possible presence of a  
 CC cancer, which is not melanoma or synovial sarcoma. The method compris  
 CC assaying a sample taken from the subject to determine the expression of  
 CC an SSX gene, and determining the expression as a determination of the  
 CC possible presence of cancer. Expression of SSX1 gene indicates possible  
 CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
 CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression  
 CC SSX2 gene expression additionally indicates possible presence of  
 CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
 CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
 CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
 CC cancer. Determining expression of SSX gene can be used to monitor  
 CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
 CC derived peptide complex stimulates proliferation of cytolytic T cells.  
 CC This is useful for treating cancer, especially melanoma. AAY78464 to  
 CC AAY78468 represent specifically claimed HLA binding peptides for use in  
 CC the method of the invention. AA288452 to AA288465 represent PCR primers  
 CC used in the isolation of SSX genes in the exemplification of the present  
 CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
 CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
 CC exemplification of the present invention  
 CC  
 CC  
 SO Sequence 11 AA;  
  
 Alignment Scores:  
 Pred. No.: 134 Length: 11  
 Score: 11.00 Matches: 11  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 6.11% Indels: 0  
 DB: 1 Gaps: 0  
  
 US-10-023-182-1 (1-752) x AAY78469 (1-11)  
  
 522 TCCTGTTGATGTCGATCAGCAGTGTCTTCTG 554  
 |||||||  
 1 SerleuDeuMeetrIpIletrngInCysPheIleu 11

|  |
|--|
| RESULT 120   |
| AAB02630   |
| ID AAB02630 standard; peptide; 11 AA.  |
| XX   |
| AC AAB02630;   |
| XX   |
| DT 18-AUG-2000 (first entry)   |
| XX   |
| DE Tumour associated peptide antigen from NY-ESO-1 #1.                       |
| XX   |
| KW MAGE-A3; HLA class II; human leukocyte antigen; antibody; vaccine;        |
| KW cancer; human; tumour; tumour associated gene product.                    |
| OS Homo sapiens.   |
| XX   |
| PN WO200020581-A1.   |
| XX   |
| PD 13-APR-2000.  |
| XX   |
| PF 15-SEP-1999; 99WO-US021230.   |
| XX   |
| PR 05-OCT-1998; 98US-00166448.   |
| XX   |
| PA (LUDW-) LUDWIG INST CANCER RES.   |
| PA (UYVR-) UNIV VIRJIE BRUSSEL.  |
| PI Chaux P, Strobant V, Boon-Falleur T, Van Der Bruggen P;                   |
| PI Schultz ES, Van Snick J, Lethe B, Thielemans K, Corthals J;               |
| PI Helrman C;  |
| DR WPI; 2000-317713/27.  |
| XX   |
| PT New MAGE-A3 class II binding peptides, useful to diagnose and treat       |
| PT tumors, are fragments of MAGE-A3 which bind to and are presented to T     |
| PT lymphocytes by human leukocyte antigen class II molecules.                |
| PS   |
| PS Disclosure; Page 33; 119pp; English.                                      |
| XX   |
| CC The present invention relates to MAGE-A3 (tumour associated gene product) |
| CC CC human leukocyte antigen (HLA) class II-binding peptides (see AAB02566- |
| CC B02595, and AAB02633-B02637). These peptides are presented to T cells in  |
| CC the context of HLA class II molecules. The peptides stimulate the         |
| CC activity and proliferation of CD4+ T lymphocytes. The invention also      |
| CC includes nucleotide sequences encoding MAGE-3A peptides (see AAA37928 and |
| CC AAA37938-A37940). The peptides and nucleotide sequences can be used to    |
| CC create antibodies against the MAGE-A3 peptides, the antibodies, peptides  |
| CC and nucleotide sequences can be used to create a vaccine. The peptides    |
| CC are used to diagnose or treat a disorder characterized by expression of   |
| CC MAGE-3, particularly cancer. The methods can also be used in the          |
| CC diagnosis of disorders associated with MAGE-3 expression. Included in the |
| CC invention are other human tumour antigens (see AAB02596-B02637), and PCR  |
| CC primers used in the course of the invention (see AAA37929-A37937 and      |
| CC AAA37941-A37942)  |
| XX   |
| SQ Sequence 11 AA:   |
|  |
| Alignment Scores:  |
| Pred. No.: 134 Length: 11  |
| Score: 11.00 Matches: 11   |
| Percent Similarity: 100.00% Conservative: 0                                  |
| Best Local Similarity: 100.00% Mismatches: 0                                 |
| Query Match: 6.11% Indels: 0   |
| DB: 1 Gaps: 0  |
|  |
| US-10-023-182-1 (1-752) x AAB02630 (1-11)                                    |
| OY 522 TCCTGTGATGATGCAGCGAGTCTTCG 554  |
| Dd   |
| 1 Serieuuueuetripplerthergincysphelu 11                                      |
| RESULT 121   |
| AAB06702   |

|   |   |                                      |
|---|---|--------------------------------------|
| ID  | AA080702  | standard; peptide; 11 AA.            |
| XX  |   |                                      |
| AC  | AA080702;   |                                      |
| XX  |   |                                      |
| DT  | 02-JAN-2001   | (first entry)                        |
| XX  |   |                                      |
| DE  | Antigenic peptide from tumour rejection antigen NY-ESO-1.                 |                                      |
| XX  |   |                                      |
| KW  | EphA3; HLA class II-binding peptide; human leukocyte antigen; antigen;    |                                      |
| KM  | CD4+ T lymphocyte; tumour associated gene; vaccine.                       |                                      |
| XX  |   |                                      |
| OS  | Homo sapiens.   |                                      |
| XX  |   |                                      |
| PN  | MO200050589-A1.   |                                      |
| XX  |   |                                      |
| PD  | 31-AUG-2000.  |                                      |
| XX  |   |                                      |
| XX  | 18-FEB-2000; 2000MO-US004326.   |                                      |
| PF  |   |                                      |
| XX  |   |                                      |
| PR  | 22-FEB-1999; 99US-0121170P.   |                                      |
| PR  | 08-OCT-1999; 99US-0158566P.   |                                      |
| XX  |   |                                      |
| PA  | (LUDM-) LUDWIG INST CANCER RES.   |                                      |
| XX  |   |                                      |
| P1  | Chiari R, Coulie P, Boon-Falleur T;                                       |                                      |
| XX  |   |                                      |
| DR  | WPI; 2000-572089/53.  |                                      |
| XX  |   |                                      |
| PT  | Novel tyrosine kinase receptor. EphA3 human leukocyte antigen (HLA) class |                                      |
| PT  | II binding peptide and nucleic acid encoding the receptor, useful for     |                                      |
| PT  | diagnosing and treating conditions characterized by expression of EphA3   |                                      |
| PT  | gene.   |                                      |
| XX  |   |                                      |
| PS  | Disclosure; Page 35; 107P; English.                                       |                                      |
| XX  |   |                                      |
| CC  | AA080668-B08704 represent antigenic peptides characteristic of tumours.   |                                      |
| CC  | The peptides may be combined in vaccines with a human EphA3 HLA (human    |                                      |
| CC  | leukocyte antigen) class II-binding peptide. EphA3 antigens, when         |                                      |
| CC  | presented by an antigen presenting cell having a HLA class II molecule,   |                                      |
| CC  | effectively induce activation and proliferation of CD4+ T lymphocytes.    |                                      |
| CC  | EphA3 is a tumour associated gene. EphA3 HLA binding peptides are used    |                                      |
| CC  | for selectively enriching a population of T lymphocytes. The peptides are |                                      |
| CC  | also used for diagnosing a disorder characterized by EphA3 or EphA3 HLA   |                                      |
| CC  | binding peptide expression. The peptides are also used to treat a         |                                      |
| CC  | disorder characterized by EphA3 expression. The EphA3 binding peptides    |                                      |
| CC  | are useful in producing vaccines and antibody                             |                                      |
| XX  |   |                                      |
| SQ  | Sequence 11 AA;   |                                      |
| XX  |   |                                      |
| Alignment Scores:                         |   |                                      |
| Pred. No.:                                | 134   | length: 11                           |
| Score:                                    | 11.00   | Matches: 11                          |
| Percent Similarity:                       | 100.00%   | Conservative: 0                      |
| Best Local Similarity:                    | 100.00%   | Mismatches: 0                        |
| Query Match:                              | 6.11%   | Indels: 0                            |
| DB:                                       | 1   | Gaps: 0                              |
| US-10-023-182-1 (1-752) x AA080702 (1-11) |   |                                      |
| QY  | 522   | TCCTGTGATGTGATCAGCAGTGCCTTCTG 554    |
| Db  | 1   | SerLeuLeuMetTrpIleThrGlnCysPheLeu 11 |
| RESULT 122                                |   |                                      |
| AAE02119                                  | standard; peptide; 11 AA.   |                                      |
| XX  | AAE02119;   |                                      |
| XX  | AAE02119;   |                                      |
| DT  | 31-JUL-2001 (first entry)   |                                      |
| XX  | NY-ESO-1 human leukocyte antigen-A2-binding peptide #1.                   |                                      |
| DE  |   |                                      |
| XX  |   |                                      |

|   |   |
|---|---|
| OS  | Homo sapiens.   |
| PN  | WO200129220-A2.   |
| XX  | 26-APR-2001.  |
| XX  | 19-OCT-2000; 2000MO-US028852.   |
| PF  | 19-OCT-1999; 99US-0160374P.   |
| PR  | 01-FEB-2000; 2000US-0179570P.   |
| XX  | (LUDW-) LUDWIG INST CANCER RES.   |
| PA  |   |
| F1  | Heidecker U, Van Den Eynde B, Boon-Falleur T, Brasseur F,                 |
| DR  | WPI; 2001-328498/34.  |
| XX  |   |
| PT  | New antigenic peptides derived from MAGG-A12 polypeptides, useful for     |
| PT  | diagnosis and treatment of cancer, such as bladder, lung, breast, brain,  |
| PT  | prostate and renal carcinomas.  |
| PS  |   |
| PS  | Disclosure; Page 21; 69pp; English.                                       |
| CC  | The patent discloses antigenic peptides derived from MAGG-A12 protein and |
| CC  | presented by human leukocyte antigens (HLAs). These antigenic peptides    |
| CC  | when presented by an antigen presenting cell having a HLA class I         |
| CC  | molecule, effectively induce the activation and proliferation of CD8+     |
| CC  | cytotoxic T lymphocytes (CTLs). MAGG-A12 is useful for treating a subject |
| CC  | having a disorder characterised by expression of MAGG-A12. The protein    |
| CC  | microarray comprising MAGG-A12 is useful for diagnosing a disorder,       |
| CC  | especially cancer, by determining the binding of an antibody, T           |
| CC  | lymphocytes or a HLA molecule isolated from the subject suspected of      |
| CC  | having the disorder characterised by the expression of MAGG-A12. MAGG-A12 |
| CC  | is useful for treating cancers, including bladder carcinomas, melanomas,  |
| CC  | oesophagael, lung, head and neck, breast, colorectal carcinomas,          |
| CC  | myelomas, brain tumours, sarcomas, prostate and renal carcinomas, and to  |
| CC  | produce antibodies. MAGG-A12 antibodies are useful for diagnosing         |
| CC  | disorders characterised by expression of MAGG-A12 immunogenic             |
| CC  | polypeptide. These MAGG-A12 peptides are used as vaccines. They are also  |
| CC  | used in gene therapy. The present sequence is an antigenic peptide        |
| CC  | derived from NY-ESO-1. This peptide which is characteristic of tumours is |
| CC  | represented by HLA-A2 MHC (major histocompatibility complex) and is       |
| CC  | recognised by CTLs  |
| XX  |   |
| SQ  | Sequence 11 AA:   |
| Alignment Scores:                         |   |
| Pred. NO.:                                | 134   |
| Score:                                    | 11.00   |
| Percent Similarity:                       | 100.00%   |
| Best Local Similarity:                    | 100.00%   |
| Query Match:                              | 6.11%   |
| DB:                                       | 1   |
| Gaps:                                     | 0   |
| US-10-023-182-1 (1-752) x AAE02119 (1-11) |   |
| OY  | 522 TCCTGTGGATGTGCATCACGACGAGTCTTTCTG 554                                 |
| Dd  |   |
| Db  | 1 SerLeuLeuMetTrpIleThnclnlnyShetleu 11                                   |
| RESULT 123                                |   |
| AAB69947                                  |   |
| ID  | AAB69947 standard; peptide; 11 AA.  |
| XX  |   |
| AC  | AAB69947;   |
| XX  |   |
| DT  | 27-APR-2001 (first entry)   |
| XX  |   |
| DE  | Human NY-ESO-1 CTL stimulating peptide #1.                                |

```
XX Human: NY-ESO-1; HLA: human leukocyte antigen; CTL; cytotoxic T cell;
KM HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KM non-small cell lung carcinoma; tumour status determination.
XX
XX Homo sapiens.
OS
XX WO200107917-A1.
PN
XX 01-FEB-2001.
PD
XX 14-JUL-2000; 2000WO-US019220.
PF
XX 23-JUL-1999; 99US-00359503.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK ) SLOAN KETERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
PI
XX WPI; 2001-182822/18.
DR
XX
XX Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
XX Example 13; Page 24; 50pp; English.
XX
XX The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
XX Sequence 11 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 134 Length: 11
Score: 11.00 Matches: 11
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 6.11% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69947 (1-11)
QY 522 TCCTGTGATGATCAGCAGTGTCTTG 554
DB 1 SerleuNeuMetTrpIleThrGlnCysPheIeu 11
RESULT 124
AAG67165
ID AAG67165 standard; peptide; 11 AA.
XX
XX AAG67165;
AC
XX
XX 13-NOV-2001 (first entry)
DT
XX
XX Cancer testis tumour antigen NY-ESO-1 derived CTL-stimulating peptide.
DE
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
XX Homo sapiens.
OS
```

```
XX
XX WO200162917-A1.
PN
XX 30-AUG-2001.
PD
XX
XX 22-JAN-2001; 2001WO-US002126.
PF
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Leche B, Boon-Falleur T;
PI
XX
XX WPI; 2001-550091/61.
DR
XX
XX Genomic sequences of tumor associated antigen Ey-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
PT
XX
XX Example 12; Page 24; 50pp; English.
XX
XX The present sequence represents a peptide which is derived from cancer
CC testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptide
CC stimulates cytolytic T cell lines (CTLs). NY-ESO-1 is a molecule that is
CC processed to at least one human leukocyte antigen (HLA) binding peptide,
CC which binds to Class I and Class II major histocompatibility complex
CC (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal
CC colon, kidney, liver or brain tissue. The presence or level of expression
CC of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis
CC tumours
XX
XX Sequence 11 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 134 Length: 11
Score: 11.00 Matches: 11
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 6.11% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAG67165 (1-11)
QY 522 TCCTGTGATGATCAGCAGTGTCTTG 554
DB 1 SerleuNeuMetTrpIleThrGlnCysPheIeu 11
RESULT 125
AAU01536
ID AAU01536 standard; peptide; 11 AA.
XX
XX AAU01536;
AC
XX
XX 18-JUL-2001 (first entry)
DT
XX
XX Cytolytic T cell line stimulator peptide #1.
DE
XX
XX NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;
KM major histocompatibility complex; helper T cell; HLA-DR; cancer;
KM human leukocyte antigen-determining region; disease progression;
KM disease regression; disease onset; body tissue; body fluid; enzyme label;
KM radioactive label; monoclonal antibody; cytolytic T cell line.
XX
XX Homo sapiens.
OS
XX
XX WO200123560-A2.
PN
XX
XX 05-APR-2001.
PD
XX
XX 26-SEP-2000; 2000WO-US026411.
PF
XX 29-SEP-1999; 99US-00408036.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
```

XX Tureci O, Sahin U, Fireundschuh M;  
PI  
XX  
XX MPI; 2001-266156/27.  
XX  
XX  
XX Polypeptides binding to major histocompatibility complex class II human  
PT leukocyte antigen-determining region molecule having amino acid sequence  
PT found in tumor rejection antigen precursor used for stimulating  
PT proliferation of helper T cells.  
XX  
XX  
XX Example 12; Page 17; 62pp; English.  
XX  
XX The sequence represents a human NY-ESO-1 tumour rejection antigen  
CC precursor fragment which efficiently stimulates cytolytic T cell lines.  
CC NY-ESO-1 and SSX-2 polypeptides, or fragments of, bind to major  
CC histocompatibility complex (MHC) class II molecules such as human  
CC leukocyte antigen-determining region (HLA-DR) molecules and stimulate  
CC proliferation of helper T cells. The peptides can be administered to an  
CC HLA-DR positive subject in order to stimulate the helper T cells. An MHC  
CC class II HLA-DR-NY-ESO-1/SSX-2 complex expressed on the surface of a cell  
CC or present in free form is useful for this stimulation. The nucleic acid  
CC is useful for screening for a cancerous condition, which involves  
CC contacting a subject sample to a cell line transfected with the  
CC immunoreactive cell (helper T cell), where interaction is indicative of  
CC cancer. In addition, a sample from a patient (for example, a body fluid  
CC or tissue) can be monitored for the amount of the complex present in the  
CC bloodstream. This is useful for determining regression, progression or  
CC onset of a cancerous condition. The method involves contacting the sample  
CC with a radioactive labelled or enzyme labelled monoclonal antibody which  
CC specifically binds with the complex  
XX  
XX Sequence 11 AA;  
SQ  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAU01536 (1-11)  
OY 522 TCCTGTGATGTGATCAGCAGTCTTTCTG 554  
DB 1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11  
RESUT 126  
AAB31327 standard; peptide; 11 AA.  
ID AAB31327  
XX  
XX AAB31327;  
AC  
XX  
XX 20-APR-2001 (first entry)  
DT  
XX  
XX Exemplary antigen characteristic of tumours and derived from NY-ESO-1.  
DE  
XX  
XX MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;  
KW MAGE-A1 HLA class II-binding protein; vaccine.  
XX  
XX Homo sapiens.  
OS  
XX  
XX WO200078806-A1.  
PN  
XX  
XX 28-DEC-2000.  
PD  
XX  
XX 14-JUN-2000; 2000WO-US016287.  
PE  
XX  
XX 18-JUN-1999; 99US-00336091.  
PR  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA  
XX  
XX Van Snick J, Lethe B, Chau P, Boon-Falleur T, Van Der Bruggen P;  
PI

XX  
XX MPI; 2001-102698/11.  
DR  
XX  
XX Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and  
PT are presented to the class II molecules, useful for inducing immune  
PT response and treating cancers characterized by expression of MAGE-A1.  
XX  
XX  
XX Disclosure; Page 32; 78pp; English.  
XX  
XX AAB31302-59 represent exemplary antigens which are characteristic of  
CC tumours. They can be used to enhance the immune response of vaccines  
CC comprising peptides derived from human MAGE-A1 HLA (human leukocyte  
CC antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA  
CC binding protein stimulate the activity and proliferation of CD4+ T  
CC lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic  
CC agent for diagnosing a disorder characterized by expression of MAGE-A1.  
CC The protein is used for treating a disorder characterized by expression  
CC of MAGE-A1 such as cancers e.g. melanoma, squamous cell carcinomas,  
CC colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides  
CC derived from the MAGE-A1 HLA binding protein are useful in the production  
CC of anti-tumour vaccines  
XX  
XX  
XX Sequence 11 AA;  
SQ  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAB31327 (1-11)  
OY 516 CAGCTTCCCTGTGATGTGATCAGCAGTGC 548  
DB 1 GlnLeuSerLeuLeuMetTrpIleThrGlnCys 11  
RESUT 127  
AAB31328 standard; peptide; 11 AA.  
ID AAB31328  
XX  
XX AAB31328;  
AC  
XX  
XX 20-APR-2001 (first entry)  
DT  
XX  
XX Exemplary antigen characteristic of tumours and derived from NY-ESO-1.  
DE  
XX  
XX MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;  
KW MAGE-A1 HLA class II-binding protein; vaccine.  
XX  
XX Homo sapiens.  
OS  
XX  
XX WO200078806-A1.  
PN  
XX  
XX 28-DEC-2000.  
PD  
XX  
XX 14-JUN-2000; 2000WO-US016287.  
PE  
XX  
XX 18-JUN-1999; 99US-00336091.  
PR  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA  
XX  
XX Van Snick J, Lethe B, Chau P, Boon-Falleur T, Van Der Bruggen P;  
PI  
XX  
XX MPI; 2001-102698/11.  
DR  
XX  
XX Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and  
PT are presented to the class II molecules, useful for inducing immune  
PT response and treating cancers characterized by expression of MAGE-A1.  
XX  
XX  
XX Disclosure; Page 32; 78pp; English.  
XX

CC AAB31302-59 represent exemplary antigens which are characteristic of  
CC tumours. They can be used to enhance the immune response of vaccines  
CC comprising peptides derived from human MAGE-A1 HLA (human leukocyte  
CC antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA  
CC binding protein stimulate the activity and proliferation of CD4+ T  
CC lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic  
CC agent for diagnosing a disorder characterized by expression of MAGE-A1.  
CC The protein is used for treating a disorder characterized by expression  
CC of MAGE-A1 such as cancers e.g. melanoma, squamous cell carcinoma,  
CC colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides  
CC derived from the MAGE-A1 HLA binding protein are useful in the production  
CC of anti-tumour vaccines  
XX  
SQ Sequence 11 AA;  
  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAB31328 (1-11)  
OY 522 TCCCTGTGATGCATCAGCAGTCTTCTG 554  
DB 1 SerleuNeuMetTrpIleThrGlnCysPheLeu 11  
  
RESULT 128  
AAB85298 ID AAB85298 standard; peptide; 11 AA.  
XX  
XX AAB85298;  
XX  
DT 17-SEP-2001 (first entry)  
XX  
XX HLA-A2 binding NY-ESO-1 peptide #1.  
DE  
XX NY-ESO-1; human leukocyte antigen; HLA; lysis; cytolytic T cell; CTL;  
KM HLA-A2; 1-cell sorter; tumor; immune tetramer.  
XX  
XX Homo sapiens.  
OS  
XX MO200136453-A2.  
PN  
XX 25-MAY-2001.  
PD  
XX 08-NOV-2000; 2000MO-US042010.  
PF  
XX 15-NOV-1999; 99US-00440621.  
PR 25-FEB-2000; 2000US-00514036.  
PR 29-SEP-2000; 2000US-00676005.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA (UYOX-) UNIV OXFORD.  
PI  
XX Valmori D, Cerottini J, Romero P, Cerundolo V;  
XX WPI; 2001-451454/48.  
DR  
XX Novel isolated NY-ESO-1 nonapeptide useful for determining if a cell  
PT presents human leukocyte antigen-A2 molecule on its surface, binds to  
PT human leukocyte antigen molecules and provokes lysis by cytolytic T  
PT cells.  
XX  
XX Example 1; Page 4; 38pp; English.  
PS  
XX The invention provides NY-ESO-1 peptide derivatives which bind to human  
CC leukocyte antigen (HLA) molecules and provokes lysis by cytolytic T cells  
CC (CTLs). The NY-ESO-1 nonapeptide is of formula SLIMWITQX, where X is an  
CC amino acid having an unchanged polar side chain. The NY-ESO-1 peptide  
CC derivatives are useful for determining if a cell presents an HLA-A2

CC molecule on its surface, by contacting a sample containing the cell with  
CC the peptide or its derivative, and determining binding between them. The  
CC where the binding is indicative of HLA-A2 on the surface of the cell. The  
CC NY-ESO-1 peptides and analogues are useful therapeutically, for  
CC administration to a patient who is HLA-A2 positive and expresses NY-ESO-1  
CC in connection with the pathology, as well as diagnostically, i.e. to  
CC determine if HLA-A2 positive cells are present, or if relevant CTLs are  
CC present. They are also useful for determining the presence of CTLs in a  
CC sample. The peptides are useful as T-cell sorters, when incorporated into  
CC immune tetramers. The present sequence represents a NY-ESO-1 peptide that  
CC can bind to HLA-A2 molecule  
XX  
SQ Sequence 11 AA;  
  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAB85298 (1-11)  
OY 522 TCCCTGTGATGCATCAGCAGTCTTCTG 554  
DB 1 SerleuNeuMetTrpIleThrGlnCysPheLeu 11  
  
RESULT 129  
AAB82016 ID AAB82016 standard; peptide; 11 AA.  
XX  
XX AAB82016;  
XX  
DT 12-JUN-2001 (first entry)  
XX  
XX HLA-A2 binding peptide derived from NY-ESO-1.  
DE  
XX Multiple myeloma; tumour rejection antigen precursor; MAGE; BAGE; GAGE;  
KM LAGE; NY-ESO-1; PRAME; DAGS; human; HLA.  
XX  
XX Homo sapiens.  
OS  
XX US6210886-B1.  
PN  
XX 03-APR-2001.  
PD  
XX 30-OCT-1998; 98US-00183931.  
PF  
XX 04-FEB-1998; 98US-00018422.  
PR  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA  
XX Van Baren N, Brasseur F, Boon-Falleur T;  
XX WPI; 2001-289628/30.  
DR  
XX Detecting multiple myeloma in a patient, comprises contacting a nucleic  
PT acid containing sample taken from bone marrow or blood with a  
PT hybridization probe specific for a tumor rejection antigen precursor.  
PT  
XX  
XX Example 3; Col 11; 16pp; English.  
PS  
XX The present invention relates to a method for detecting multiple myeloma.  
CC The method comprises contacting a nucleic acid containing a sample taken  
CC from a bone marrow or blood of a patient, with a hybridisation probe  
CC specific for a tumour rejection antigen precursor. Tumour rejection  
CC antigen precursors used in the present invention are the MAGE family,  
CC BAGE, GAGE, LAGE, NY-ESO-1 and PRAME (previously referred to as DAGS).  
CC Expression of the tumour rejection antigen precursor indicates possible  
CC multiple myeloma in the patient. The method can also be used for  
CC monitoring the disease progress and course of therapeutic regime. The  
CC present sequence is a peptide derived from a tumour rejection antigen

CC precursor, which was used in the method of the present invention  
XX  
SQ Sequence 11 AA;  
  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAB82016 (1-11)  
  
QY 522 TCCTGTGATGATGATGATGATGATGATG 554  
DB 1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11  
  
RESULT 130  
AAE07752  
ID AAE07752 standard; peptide; 11 AA.  
AC AAE07752;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #5 to characterise epitope recognised by TE4-1.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
PD  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Example 6; Fig 6A; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human NY ESO-1

CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by TE4-1  
XX  
SQ Sequence 11 AA;  
  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAE07752 (1-11)  
  
QY 390 GCCCAGCGCTTCCGTCGACGAGGATGCTTCTG 422  
DB 1 AlaProPheLeuProValProGlyValLeuLeu 11  
  
RESULT 131  
AAE07784  
ID AAE07784 standard; peptide; 11 AA.  
AC AAE07784;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 peptide #18 to characterise epitope recognised by TE4-1.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
PD  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
XX  
DR WPI; 2001-496851/54.  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Example 6; Fig 6A; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-

CC mediated immunity against cancer. The present sequence is human NY ESO-1  
CC peptide used in the characterisation of the NY ESO-1 epitope recognised  
CC by TE4-1  
XX  
SQ Sequence 11 AA;  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07784 (1-11)  
QY 411 GGAGTCTTGAAGAGTTCACTGTGTCGGC 443  
Db 1 GlyValIeuLeuLysGluPheThrValSerGly 11  
RESULT 132  
AAE07725  
ID AAE07725 standard; peptide; 11 AA.  
XX  
AC AAE07725;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human NY ESO-1 MHC class II restricted T cell epitope #11.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
PI WPI; 2001-496851/54.  
DR  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Claim 4; Page 16; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given

CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein  
XX  
SQ Sequence 11 AA;  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07725 (1-11)  
QY 411 GGAGTCTTGAAGAGTTCACTGTGTCGGC 443  
Db 1 GlyValIeuLeuLysGluPheThrValSerGly 11  
RESULT 133  
AAE07777  
ID AAE07777 standard; peptide; 11 AA.  
XX  
AC AAE07777;  
XX  
DT 06-NOV-2001 (first entry)  
XX  
DE Human wildtype NY ESO-1 peptide, ESOP157-167.  
XX  
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200155393-A2.  
XX  
PD 02-AUG-2001.  
XX  
PF 26-JAN-2001; 2001WO-US002765.  
XX  
PR 28-JAN-2000; 2000US-0179004P.  
PR 29-SEP-2000; 2000US-0237107P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang R, Rosenberg SA, Zeng G;  
PI WPI; 2001-496851/54.  
DR  
XX  
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.  
XX  
PS Example 14; Page 62; 134pp; English.  
XX  
CC The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given

CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is human wildtype  
CC NY ESO-1 peptide, ES0p157-167  
XX  
SQ Sequence 11 AA;  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE07777 (1-11)  
QY 522 TCCTGTGATGATCAGCGAGTCTTCTG 554  
DB 1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11  
RESULT 134  
AAE06849  
ID AAE06849 standard; peptide; 11 AA.  
AC AAE06849;  
XX  
DT 16-OCT-2001 (first entry)  
XX  
DE Human NY-ESO-1 antigenic peptide #1.  
XX  
XX MAGE antigenic peptide; Human leukocyte antigen; HLA-B35; HLA-B44;  
KM tumour cell; immunostimulant; antigen presentation; cancer; melanoma;  
KM CD8+ cytotoxic T lymphocyte; colorectal; prostate; gastric carcinoma;  
KM myeloma; brain tumour; sarcoma; seminoma; ovarian tumour; cytostatic;  
KM gene therapy; tumour rejection antigen; TRA; human; NY-ESO-1; MHC;  
KM major histocompatibility complex.  
XX  
OS Homo sapiens.  
XX  
PN WO200153833-A1.  
XX  
PD 26-JUL-2001.  
XX  
PF 19-JAN-2001; 2001WO-US002008.  
XX  
PR 20-JAN-2000; 2000US-0177242P.  
XX  
PR 25-OCT-2000; 2000US-0243212P.  
XX  
PA (LUDM-) LUDMIG INST CANCER RES.  
XX  
XX Luiten R, Boon-Faljeur T, Van Der Bruggen P, Stroobant V;  
PI Demotte N, Schultz E;  
XX  
XX WPI: 2001-488724/53.  
XX  
XX Functional variants and isolated mimetics of a MAGE-A1 HLA-B35 or HLA-B44  
PT binding peptide, or of a MAGE-A3 HLA-B35 binding peptide, used in  
PT diagnosis and treatment of a disorder characterized by expression of MAGE  
PT -A1 or -A3.  
XX  
XX  
XX Disclosure; Page 28; 103pp; English.  
XX  
XX The invention relates to functional variants and isolated mimetics of a  
CC MAGE-A1 human leukocyte antigen (HLA)-B35 or HLA-B44 binding peptide, or  
CC of a MAGE-A3 HLA-B35 binding peptide, identified by methods described in  
CC the specification. MAGE genes encode tumour rejection antigens (TRA)  
CC presented to T lymphocytes by HLA-B35 and HLA-B44 molecules. The MAGE  
CC antigenic peptide acts by binding to HLA molecules on tumour cells and  
CC stimulating recognition of these cells and thus signalling them to the  
CC immune system for destruction. The peptide when presented by HLA molecule  
CC induces the activation and stimulation of CD8+ cytotoxic T lymphocytes.  
CC The MAGE antigenic peptide is used to treat and diagnose disorders  
CC characterised by expression of MAGE-A1 or -A3. Disorders include cancers

CC e.g. melanomas, oesophageal, lung, head and neck, breast, colorectal,  
CC prostate, renal, bladder, hepatocellular, papillary thyroid and gastric  
CC carcinomas, myeloma, brain tumours, sarcomas, seminomas, and ovarian  
CC tumours. The present sequence is human NY-ESO-1 tumour associated  
CC antigenic peptide presented by major histocompatibility complex (MHC) HLA  
CC -A2. The antigenic peptide is used in combination with peptides of the  
CC invention for inducing an immune response  
XX  
SQ Sequence 11 AA;  
Alignment Scores:  
Pred. No.: 134 Length: 11  
Score: 11.00 Matches: 11  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 6.11% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE06849 (1-11)  
QY 522 TCCTGTGATGATCAGCGAGTCTTCTG 554  
DB 1 SerLeuLeuMetTrpIleThrGlnCysPheLeu 11  
RESULT 135  
ABG66804  
ID ABG66804 standard; peptide; 11 AA.  
XX  
AC ABG66804;  
XX  
DT 24-SEP-2002 (first entry)  
XX  
DE Tumour antigen LAGE/CAMEL, HLA-A2 epitope.  
XX  
XX Beta-2 microglobulin; beta-2m; cytotoxic T lymphocyte; CTL; HLA;  
KM human leukocyte antigen; fusion protein; epitope; cytostatic; tumour;  
KM gastrointestinal tumour; colorectal cancer; gastro-oesophageal cancer;  
KM liver cancer; biliary tract cancer; pancreatic cancer; vaccine;  
KM prostate cancer; testicular cancer; lung cancer; breast cancer;  
KM malignant melanoma; mesothelioma; brain tumour; ovarian cancer;  
KM uterine cancer; cervical cancer; head and neck cancer; bladder cancer;  
KM Kaposi's sarcoma; renal carcinoma; leukaemia; lymphoma;  
KM acquired immunodeficiency syndrome; AIDS-related lymphoma.  
XX  
OS Homo sapiens.  
XX  
PN WO200236146-A2.  
XX  
PD 10-MAY-2002.  
XX  
PF 01-NOV-2001; 2001WO-GB004844.  
XX  
XX 02-NOV-2000; 2000GB-00026812.  
XX  
XX (ISIS-) ISIS INNOVATION LTD.  
XX  
XX Tafuro S, Meier U, Mcmichael AJ, Bell JI, Layton G, Hunter M;  
PI WPI: 2002-508106/54.  
XX  
XX  
XX New polynucleotide capable of expressing an epitope-beta2m fusion protein  
PT useful for generating cytotoxic T lymphocyte responses against a tumor  
PT and in restoring antigen presentation in the tumor of a host.  
XX  
XX Disclosure; Page 25; 46pp; English.  
XX  
XX The invention relates to a new polynucleotide capable of expressing an  
CC epitope-beta2m fusion protein useful for generating cytotoxic T  
CC lymphocyte (CTL) responses against a tumour or in restoring antigen  
CC presentation in the tumour of a host. Also included are a polynucleotide  
CC capable of expressing an epitope-beta2m fusion protein in combination  
CC with a vaccination agent that stimulates a CTL response against the  
CC epitope of the fusion protein for simultaneous, separate or sequential



CC use in the treatment of cancer and a method of treating a tumour by  
 CC administering a capable of expressing an epitope-beta.2m fusion protein,  
 CC and optionally a vaccination agent that stimulates a CTL response against  
 CC the epitope of the fusion protein. The polynucleotide is useful for  
 CC generating CTL responses against tumours, for restoring antigen  
 CC presentation in the tumour, and subsequently for treating cancers, such  
 CC as gastrointestinal tumour, prostate, testicular, lung or breast cancer,  
 CC cancer including cervical cancer, cancer of the head and neck, bladder  
 CC cancer, Kaposi's sarcoma, AIDS (acquired immunodeficiency syndrome)-  
 CC related Kaposi's sarcoma, sarcomas, osteosarcoma, renal carcinoma, and  
 CC haematopoietic malignant tumours such as leukaemia and lymphoma. The  
 CC epitope is an HLA (human leukocyte antigen) peptide derived from a viral  
 CC or tumour antigen. The present sequence is a tumour HLA epitope used in  
 CC the fusion proteins of the invention

SO Sequence 11 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 134     | Length:       | 11 |
| Score:                 | 11.00   | Matches:      | 11 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 6.11%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x ABG66804 (1-11)

OY 94 ATGCTGATGGCCAGAGGCGCTGGCATTCTG 126  
 |||||  
 Db 1 MetleuMetAlaGlnGlnAlaLeuAlaPheLeu 11

RESULT 136  
 ABU64812  
 ID ABU64812 standard; peptide; 11 AA.

AC ABU64812;  
 XX  
 DT 14-MAY-2003 (first entry)  
 XX  
 DE Human NY-ESO-1 CTL stimulatory peptide #1.

XX Human; antigen; NY-ESO-1; cancer; SRRX; cytosolic; immunosuppressive;  
 KW serological identification of antigens by recombinant expression cloning;  
 KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;  
 KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer;  
 KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line.

XX Homo sapiens.  
 OS  
 PN US2002164665-A1.  
 PD  
 XX 07-NOV-2002.  
 PF 17-DEC-2001; 2001US-00023182.  
 PR 03-OCT-1996; 96US-00725182.  
 PR 15-SEP-1997; 97US-00937283.  
 PR 29-DEC-2000; 2000US-00751798.  
 XX  
 XX (STOC/) STOCKERT E.  
 PA (JAGE/) JAGER E.  
 PA (CHEN/) CHEN Y.  
 PA (SCAN/) SCANLAN M.  
 PA (ALEX/) ALEXANDER K.  
 PA (OLDL/) OLD L J.

XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
 XX WPI, 2003-298695/29.  
 XX  
 XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
 PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,

PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
 PT autoimmune disorders.

PS Example 12; Page 6; 18pp; English.

XX The invention relates to an isolated antibody or binding fragment of an  
 CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridises  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cytolytic T cell line) identified by SRRX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC infections or autoimmune disorders. The present sequence represents a CTL  
 CC stimulatory peptide derived from human NY-ESO-1

SO Sequence 11 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 134     | Length:       | 11 |
| Score:                 | 11.00   | Matches:      | 11 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 6.11%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x ABU64812 (1-11)

OY 522 TCCCTGTGANGTGACGACGACTGCTTCTG 554  
 |||||  
 Db 1 SerleuNeuMetIleTyrIleGlnCysPheLeu 11

RESULT 137  
 ADA19552  
 ID ADA19552 standard; peptide; 11 AA.

AC ADA19552;  
 XX  
 DT 20-NOV-2003 (first entry)  
 XX  
 DE Human cancer antigen, NY-ESO-1 (MHC HLA-A2) #1.

XX Lymphoid tissue-specific cell; haematopoietic progenitor cell;  
 KW lymphoreticular stromal cell; transplantation; implantation;  
 KW autoimmune disease; infectious disease; maintenance; expansion;  
 KW differentiation; T cell tolerance; immune tolerance; T-cell reactivity;  
 KW therapeutic; differentiated progeny; antigen; MHC;  
 KW major histocompatibility complex; cancer; human.

XX Homo sapiens.  
 OS  
 PN US6548299-B1.  
 PD  
 XX 15-APR-2003.  
 PF 18-MAY-2000; 2000US-00574749.  
 XX

PR 12-NOV-1999; 99WO-US026795.  
 XX  
 XX (PYKE/) PYKETT M J.  
 PA (ROSE/) ROSENZWEIG M.  
 PA (SCAD/) SCADDEN D T.  
 PA (POZN/) POZNANSKY M C.  
 XX  
 XX Pykett MJ, Rosenzweig M, Scadden DT, Poznansky MC;  
 DR WPI; 2003-605374/57.  
 XX  
 XX Producing lymphoid tissue-specific cell in vivo, useful in  
 PT transplantation, implantation, autoimmune and/or infectious diseases by  
 PT introducing hematopoietic progenitor and lymphoreticular stromal cells  
 PT into a porous solid matrix.  
 XX  
 XX Disclosure; SEQ ID NO 33; 34pp; English.  
 PS  
 XX The invention discloses a method for producing lymphoid tissue-specific  
 CC cell in vivo, comprising introducing hematopoietic progenitor cells and  
 CC lymphoreticular stromal cells into a porous, solid matrix having  
 CC interconnected pores of a pore size sufficient to permit the cells to  
 CC grow throughout the matrix, and co-culturing the hematopoietic  
 CC progenitor cells and lymphoreticular stromal cells. The methods are  
 CC useful in transplantation, implantation, autoimmune diseases and/or  
 CC infectious diseases. They are particularly useful for in vivo  
 CC maintenance, expansion and/or differentiation of hematopoietic  
 CC progenitor cells, for inducing T cell tolerance, for treating a subject  
 CC to enhance immune tolerance, for inducing T-cell reactivity and for  
 CC identifying an agent suspected of affecting hematopoietic cell  
 CC development. The lymphoid tissue-specific cells are useful in laboratory  
 CC analysis and in therapeutics. The method provides rapid generation of a  
 CC large number of differentiated progeny. The sequence presented is a  
 CC cancer antigen which was used in the invention to expand hematopoietic  
 CC progenitor cells.  
 XX  
 XX Sequence 11 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 134 Length: 11  
 Score: 11.00 Matches: 11  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 6.11% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x ADA19552 (1-11)  
 QY 522 TCCCTGTGATGTGATCAGCAGTCTTCTG 554  
 Db 1 SerLeuMetTrpIleThrlGlnCysPheIeu 11  
 RESULT 138  
 ADD35559  
 ID ADD35559 standard; peptide; 11 AA.  
 AC ADD35559;  
 XX  
 XX 15-JAN-2004 (first entry)  
 DT  
 XX Human NY-ESO-1 peptide SEQ ID NO:9.  
 DE  
 XX human leukocyte antigen; HLA; cytolytic T cell stimulator;  
 KW immune response; cytostatic; gene therapy; human; NY-ESO-1;  
 KW immunogenic tumour antigen.  
 XX  
 XX Homo sapiens.  
 OS  
 XX WO2003068800-A2.  
 PN  
 XX 21-AUG-2003.  
 PD  
 XX 12-FEB-2003; 2003WO-US004182.  
 PF

XX  
 PR 13-FEB-2002; 2002US-035828P.  
 XX  
 XX (LUDW-) LUDWIG INST CANCER RES.  
 PA  
 XX Jager E, Knuth A, Old L, Gnjatic S;  
 PI  
 XX WPI; 2003-902684/82.  
 DR  
 XX  
 XX New isolated peptide that binds to an HLA molecule, useful for treating a  
 PT subject with a disorder characterized by the presence of complexes of an  
 PT HLA molecule and the peptide, e.g. cancer, and for inducing immune  
 PT response.  
 XX  
 XX Example 8; SEQ ID NO 9; 73pp; English.  
 PS  
 XX The present invention describes an isolated peptide (I) consisting of 8-  
 CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A2, HLA-  
 CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for  
 CC complexes of the peptide and the HLA molecule, where at least 8  
 CC contiguous amino acids of the peptide consist of at least 8 contiguous  
 CC amino acid sequence of P94-102, P93-101, P108-116 or P91-99. Also  
 CC described: (1) a composition comprising (I) and a carrier; (2) an  
 CC isolated nucleic acid molecule encoding (I) or the polypeptide; (3) an  
 CC expression vector comprising the nucleic acid of (2) in operable linkage  
 CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
 CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
 CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL  
 CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
 CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
 CC isolated tetramer comprising the HLA molecule, biotin and a binding  
 CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
 CC inducing an immune response in a subject; (12) treating a subject with a  
 CC disorder characterized by the presence of complexes of an HLA molecule  
 CC and the peptide; (13) a combinatorial library of derivatives of (I),  
 CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
 CC for an analogue of (I); (15) an isolated antibody or its fragment that  
 CC specifically binds a HLA/peptide complex, or (I); (16) an isolated  
 CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
 CC and (17) inducing an immune response on a subject having a disorder  
 CC characterised by the presence of the HLA molecule and the peptide. (1)  
 CC has cytostatic activity, and can be used in gene therapy. The peptides,  
 CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
 CC useful for treating a subject with a disorder characterised by the  
 CC presence of complexes of an HLA molecule and the peptide, and for  
 CC inducing an immune response. The present sequence represents a human NY-  
 CC ESO-1 peptide, which is used in the exemplification of the present  
 CC invention. NY-ESO-1 is an immunogenic tumour antigen.  
 XX  
 XX Sequence 11 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 134 Length: 11  
 Score: 11.00 Matches: 11  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 6.11% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x ADD35559 (1-11)  
 QY 522 TCCCTGTGATGTGATCAGCAGTCTTCTG 554  
 Db 1 SerLeuMetTrpIleThrlGlnCysPheIeu 11  
 RESULT 139  
 AAU85119  
 ID AAU85119 standard; peptide; 30 AA.  
 AC AAU85119;  
 XX  
 XX 08-MAY-2002 (first entry)  
 DT  
 XX

```

DE Human LAGE1 segment 2.
XX
XX Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
XX viral infection; human immunodeficiency virus; melanoma;
XX bacterial infection; Salmonella; Legionella; parasitic infection;
XX Trypanosoma; Toxoplasma; Giardia.
XX Homo sapiens.
XX
XX MO200190197-A1.
XX
XX 29-NOV-2001.
XX
XX 25-MAY-2001; 2001WO-AU000622.
XX
XX 26-MAY-2000; 2000AU-00007761.
XX
XX (AUSU ) UNIV AUSTRALIAN NAT.
XX
XX Thomson SA, Ramshaw IA;
XX
XX WPI; 2002-147575/19.
XX
XX N-PSDB; ABK36939.
XX
XX
XX New synthetic polypeptides having several different segments of at least
XX one parent polypeptide linked together differently compared to the
XX linkage in the parent polypeptide, for inducing immune response against a
XX pathogen or cancer.
XX
XX Example 3; Fig 27; 364pp; English.
XX
XX The invention relates to a new synthetic polypeptide (I) comprising
XX several different segments of at least one parent polypeptide linked
XX together in a different relationship relative to their linkage in the
XX parent polypeptide to impede, abrogate or otherwise alter at least one
XX function associated with the parent polypeptide and for inducing an
XX immune response against a pathogen or cancer. Also included are a
XX synthetic polynucleotide encoding and a computer system for designing the
XX synthetic polypeptides. The synthetic polypeptides and polynucleotides
XX are referred to as a Savine. The synthetic polypeptide is useful for
XX modulating immune responses preferably directed against a pathogen or a
XX cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
XX and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
XX oesophagus, brain, testicle, uterus), as potentiating agents.
XX Compositions comprising the polypeptide may be used in the treatment or
XX prophylaxis against viral (such as infections caused by HIV (human
XX immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
XX virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
XX (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
XX CC Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
XX (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
XX Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
XX a peptide derived from a parent protein used to construct a savine of the
XX invention
XX
XX Sequence 30 AA;
XX
XX Alignment Scores:
XX Pred. No.: 211 Length: 30
XX Score: 11.00 Matches: 11
XX Percent Similarity: 44.00% Conservative: 0
XX Best Local Similarity: 44.00% Mismatches: 14
XX Query Match: 6.18% Indels: 0
XX Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAU85119 (1-30)
XX
XX 187 GGACCTCTGCGCGGACCGGCTCTCTGCGGCGCGGACGATTCGCCCTGGGCGCA 128
XX ||||| ||| ||| ||||| ||| |||||
XX 4 GTPProGlyGlyProGlyTlleProHapolyProGlyGlyAenHlaGlyGlyProGlyGlu 23
XX ||||| ||| |||
XX 127 TCAGGAATGCGAGGG 113

```

```

Db 24 AlaGlyAlaThrGly 28
XX
XX RESULT 140
XX AAU85105
XX ID AAU85105 standard; peptide; 30 AA.
XX
XX AAU85105;
XX
XX 08-MAY-2002 (first entry)
XX
XX Human NYSOLA segment 4.
XX
XX
XX Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
XX viral infection; human immunodeficiency virus; melanoma;
XX bacterial infection; Salmonella; Legionella; parasitic infection;
XX Trypanosoma; Toxoplasma; Giardia.
XX Homo sapiens.
XX
XX MO200190197-A1.
XX
XX 29-NOV-2001.
XX
XX 25-MAY-2001; 2001WO-AU000622.
XX
XX 26-MAY-2000; 2000AU-00007761.
XX
XX (AUSU ) UNIV AUSTRALIAN NAT.
XX
XX Thomson SA, Ramshaw IA;
XX
XX WPI; 2002-147575/19.
XX
XX N-PSDB; ABK36925.
XX
XX
XX New synthetic polypeptides having several different segments of at least
XX one parent polypeptide linked together differently compared to the
XX linkage in the parent polypeptide, for inducing immune response against a
XX pathogen or cancer.
XX
XX Example 3; Fig 27; 364pp; English.
XX
XX The invention relates to a new synthetic polypeptide (I) comprising
XX several different segments of at least one parent polypeptide linked
XX together in a different relationship relative to their linkage in the
XX parent polypeptide to impede, abrogate or otherwise alter at least one
XX function associated with the parent polypeptide and for inducing an
XX immune response against a pathogen or cancer. Also included are a
XX synthetic polynucleotide encoding and a computer system for designing the
XX synthetic polypeptides. The synthetic polypeptides and polynucleotides
XX are referred to as a Savine. The synthetic polypeptide is useful for
XX modulating immune responses preferably directed against a pathogen or a
XX cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
XX and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
XX oesophagus, brain, testicle, uterus), as potentiating agents.
XX Compositions comprising the polypeptide may be used in the treatment or
XX prophylaxis against viral (such as infections caused by HIV (human
XX immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
XX virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
XX (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
XX CC Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
XX (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
XX Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
XX a peptide derived from a parent protein used to construct a savine of the
XX invention
XX
XX Sequence 30 AA;
XX
XX Alignment Scores:
XX Pred. No.: 211 Length: 30
XX Score: 11.00 Matches: 11
XX Percent Similarity: 44.00% Conservative: 0
XX Best Local Similarity: 44.00% Mismatches: 14
XX Query Match: 6.18% Indels: 0

```



```
XX SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153
Score: 10.00
Percent Similarity: 100.00%
Best Local Similarity: 100.00%
Query Match: 5.56%
DB: 1
Gaps: 0
US-10-023-182-1 (1-752) x AAY06059 (1-10)
QY 282 AGATCGGGGCGGAGAGCGGC 311
Db 1 ArgCysGlyAlaArgGlyProGluSerArg 10
RESULT 143
AAY06062
ID AAY06062 standard; peptide: 10 AA.
AC AAY06062;
XX 16-AUG-1999 (first entry)
DT 16-AUG-1999 (first entry)
XX Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-44.
DE
XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;
KM leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KM vaccine; cytotoxic T lymphocyte; CTL.
XX Homo sapiens.
OS
XX MO9918206-A2.
PN 15-APR-1999.
XX 21-SEP-1998; 98WO-US019609.
PF 08-OCT-1997; 97US-0061428P.
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA Wang RF, Rosenberg SA;
XX Wang RF, Rosenberg SA;
PI WPI; 1999-277270/23.
DR
XX Cancer antigen NY ESO1/CAG-3.
PT
XX Example 10; Page 45; 88pp; English.
PS
XX Peptide ESO10-44 corresponds to amino acid residues 44-52 of human NY ESO
CC -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. It was examined
CC for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of
CC granulocyte macrophage colony stimulating factor. Cancer peptides (see
CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,
CC are useful as cancer vaccines. A claimed method of preventing or
CC inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX Sequence 10 AA;
Alignment Scores:
Pred. No.: 153
Length: 10
```

```
Score: 10.00
Percent Similarity: 100.00%
Best Local Similarity: 100.00%
Query Match: 5.56%
DB: 1
Gaps: 0
US-10-023-182-1 (1-752) x AAY06062 (1-10)
QY 180 AGAGTCCCGGCGGCGAGGCGAGCAGG 209
Db 1 ArgGlyProArgGlyAlaGlyAlaAlaArg 10
RESULT 144
AAY05982
ID AAY05982 standard; peptide: 10 AA.
AC AAY05982;
XX 16-AUG-1999 (first entry)
DT 16-AUG-1999 (first entry)
XX Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.
DE
XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;
KM leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KM vaccine.
XX Homo sapiens.
OS
XX MO9918206-A2.
PN 15-APR-1999.
XX 21-SEP-1998; 98WO-US019609.
PF 08-OCT-1997; 97US-0061428P.
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA Wang RF, Rosenberg SA;
XX Wang RF, Rosenberg SA;
PI WPI; 1999-277270/23.
DR N-PSDB; AAX58601.
XX Cancer antigen NY ESO1/CAG-3.
PT
XX Claim 26; Page 65; 88pp; English.
PS
XX The present sequence represents a cancer peptide that is based on amino
CC acid residues 19-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see AAY05966),
CC a new and potent tumour antigen capable of eliciting an antigen specific
CC immune response by T cells. Cancer peptides derived from CAG-3 ORF2, CAG-
CC 3 ORF1 (see AAY05965), portions of them and their variants (see AAY05967-
CC 87), are useful as cancer vaccines that protect against cancer. The
CC invention provides: vectors and host cells (also useful as vaccines); a
CC method of diagnosis of cancer or precancer; a transgenic animal;
CC antisense oligonucleotides that inhibit expression of the cancer peptide
CC or tumour antigen; antibodies reacting with a CAG-3 cancer peptide,
CC useful in diagnostic and detection assays; and methods for preventing or
CC inhibiting cancer by administering a cancer peptide, with or without an
CC HLA molecule. The cancer peptides form part of, or are derived from,
CC cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by
CC inducing cancer-specific T cells in vitro for subsequent return to a
XX patient
XX Sequence 10 AA;
```

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAY05982 (1-10)

QY 145 CTTGGCGCCAGAGAGCGGTGCACCG 174  
 |||  
 DB 1 LeuAlaIaAGInGluArgValProArg 10

RESULT 145  
 AAY05996  
 ID AAY05996 standard; peptide; 10 AA.  
 AC AAY05996;  
 XX  
 DT 16-AUG-1999 (first entry)  
 DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
 XX  
 XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; human leukocyte antigen; HLA.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO9918206-A2.  
 PD 15-APR-1999.  
 XX  
 PF 21-SEP-1998; 98WO-US019609.  
 XX  
 PR 08-OCT-1997; 97US-0061428P.  
 XX  
 PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 XX  
 PI Wang RF, Rosenberg SA;  
 XX  
 DR WPI; 1999-277270/23.  
 XX  
 PT Cancer antigen NY ESO1/CAG-3.  
 XX  
 PS Example 10; Page 42; 88pp; English.  
 XX  
 CC This peptide was identified as an HLA peptide motif following a screen  
 CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AA858599). 30 Epitopes (see AA05988-Y06017) were identified. The present  
 CC peptide (ranked 9) corresponds to amino acid residues 163-172 of CAG-1  
 CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers  
 XX  
 SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY05996 (1-10)

QY 540 ACGAGTGTCTTGTGCGGTGTTTGCT 569  
 |||  
 DB 1 ThrGInCysPheLeuProValPheLeuAla 10

RESULT 146  
 AAY06014  
 ID AAY06014 standard; peptide; 10 AA.  
 AC AAY06014;  
 XX  
 DT 16-AUG-1999 (first entry)  
 DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
 XX  
 XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; human leukocyte antigen; HLA.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO9918206-A2.  
 PD 15-APR-1999.  
 XX  
 PF 21-SEP-1998; 98WO-US019609.  
 XX  
 PR 08-OCT-1997; 97US-0061428P.  
 XX  
 PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 XX  
 PI Wang RF, Rosenberg SA;  
 XX  
 DR WPI; 1999-277270/23.  
 XX  
 PT Cancer antigen NY ESO1/CAG-3.  
 XX  
 PS Example 10; Page 42; 88pp; English.  
 XX  
 CC This peptide was identified as an HLA peptide motif following a screen  
 CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AA58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present  
 CC peptide (ranked 27) corresponds to amino acid residues 22-31 of CAG-1  
 CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers  
 XX  
 SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |



```
XX AC AAY05999;
XX DT 16-AUG-1999 (first entry)
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; pancreatic cancer;
XX cervical cancer; bladder cancer; kidney cancer; ovarian cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX OS Homo sapiens.
XX PN MO9918206-A2.
XX PD 15-APR-1999.
XX PF 21-SEP-1998; 98WO-US019609.
XX PR 08-OCT-1997; 97US-0061428P.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Wang RF, Rosenberg SA;
XX DR WPI; 1999-277270/23.
XX PT Cancer antigen NY ESO1/CAG-3.
XX PS Example 10; Page 42; 88pp; English.
XX XX
XX This peptide was identified as an HLA peptide motif following a screen
XX for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
XX CC AAY58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
XX CC peptide (ranked 12) corresponds to amino acid residues 152-161 of CAG-1
XX CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
XX CC eliciting an antigen specific immune response by T cells. Cancer peptides
XX CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
XX CC variants, are useful as cancer vaccines. A claimed method of preventing
XX CC or inhibiting cancer involves administering a cancer peptide, with or
XX CC without an HLA molecule. The cancer peptides form part of, or are derived
XX CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
XX CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX CC prostate, ovarian, pancreatic and thyroid cancers
XX SQ Sequence 10 AA;
XX XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAY05999 (1-10)
XX
XX OY 507 TGTCTCCAGCAGCTTTCCCTGTTGATGTGG 536
XX DB 1 CysLeuGlnGlnLeuSerLeuLeuMetTrp 10
XX
XX RESULT 150
XX AAY06010
XX ID AAY06010 standard; peptide; 10 AA.
XX AC AAY06010;
XX DT 16-AUG-1999 (first entry)
```

```
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX OS Homo sapiens.
XX PN MO9918206-A2.
XX PD 15-APR-1999.
XX PF 21-SEP-1998; 98WO-US019609.
XX PR 08-OCT-1997; 97US-0061428P.
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Wang RF, Rosenberg SA;
XX DR WPI; 1999-277270/23.
XX PT Cancer antigen NY ESO1/CAG-3.
XX PS Example 10; Page 42; 88pp; English.
XX XX
XX This peptide was identified as an HLA peptide motif following a screen
XX for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
XX CC AAY58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
XX CC peptide (ranked 23) corresponds to amino acid residues 86-95 of CAG-1
XX CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
XX CC eliciting an antigen specific immune response by T cells. Cancer peptides
XX CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
XX CC variants, are useful as cancer vaccines. A claimed method of preventing
XX CC or inhibiting cancer involves administering a cancer peptide, with or
XX CC without an HLA molecule. The cancer peptides form part of, or are derived
XX CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
XX CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX CC prostate, ovarian, pancreatic and thyroid cancers
XX SQ Sequence 10 AA;
XX XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAY06010 (1-10)
XX
XX OY 309 CGCCTGCTTGAGTTCTACCTGCATGCGCT 338
XX DB 1 ArgLeuLeuGlnIleuPheTyrLeuAlaMetPro 10
XX
XX RESULT 151
XX AAY06012
XX ID AAY06012 standard; peptide; 10 AA.
XX AC AAY06012;
XX DT 16-AUG-1999 (first entry)
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
```



```

KW Leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
XX Homo sapiens.
XX
XX MO9918206-A2.
XX
XX 15-APR-1999.
XX
XX 21-SEP-1998; 98WO-US019609.
XX
XX 08-OCT-1997; 97US-0061428P.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Wang RF, Rosenberg SA;
XX
XX WPI, 1999-277270/23.
XX
XX
XX Cancer antigen NY ESO1/CAG-3.
XX
XX
XX Example 10; Page 42; 88pp; English.
XX
XX This peptide was identified as an HLA peptide motif following a screen
XX for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
XX AA558599). 30 Epitopes (see AA105988-106017) were identified. The present
XX peptide (ranked 25) corresponds to amino acid residues 71-80 of CAG-1
XX ORF1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of
XX eliciting an antigen specific immune response by T cells. Cancer peptides
XX (see AA05967-87) derived from CAG-3, portions of CAG-3 and their
XX variants, are useful as cancer vaccines. A claimed method of preventing
XX or inhibiting cancer involves administering a cancer peptide, with or
XX without an HLA molecule. The cancer peptides form part of, or are derived
XX from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
XX cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX prostate, ovarian, pancreatic and thyroid cancers
XX
XX Sequence 10 AA:
XX
XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0
XX
XX
XX US-10-023-182-1 (1-752) x AA06012 (1-10)
XX
XX QY 264 GGGCTGAATGATGCTGCAGATCGGGGCGC 293
XX |||||
XX Db 1 GlyleuAenGlyCyeCySarGySeGlyAla 10
XX
XX RESULT 152
XX ID AA05991 standard; peptide; 10 AA.
XX AC
XX AA05991;
XX
XX 16-AUG-1999 (first entry)
XX
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX

```

|                 |   |   |
|-----------------|---|---|
| KM              |   | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy; |
| KW              |   | vaccine; human leukocyte antigen; HLA.                            |
| XX <sub>1</sub> |   |   |
| OS              |   | Homo sapiens.   |
| XX              |   |   |
| PN              |   | M09J18Z06-A2.   |
| XX              |   |   |
| PD              |   | 15-APR-1999.  |
| XX              |   |   |
| PF              |   | 21-SEP-1998; 98WO-US019609.                                       |
| XX              |   |   |
| PR              |   | 08-OCT-1997; 97US-0061428P.                                       |
| XX              |   |   |
| PA              | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |   |
| PI              | Wang RF, Rosenberg SA;  |   |
| XX              |   |   |
| DR              | WPI; 1999-277270/23.  |   |
| XX              |   |   |
| PT              | Cancer antigen NY ESO1/CAG-3.   |   |
| PS              | Example 10; Page 42; 88pp; English.                                       |   |
| XX              |   |   |
| CC              | This peptide was identified as an HLA peptide motif following a screen    |   |
| CC              | for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see        |   |
| CC              | AAV58599). 30 Epitopes (see AAV05988-Y06017) were identified. The present |   |
| CC              | peptide (ranked 4) corresponds to amino acid residues 170-179 of CAG-1    |   |
| CC              | ORF1 (see AAV05965). CAG-1 is a new and potent tumour antigen capable of  |   |
| CC              | eliciting an antigen specific immune response by T cells. Cancer peptides |   |
| CC              | (see AAV05967-87) derived from CAG-3, portions of CAG-3 and their         |   |
| CC              | variants, are useful as cancer vaccines. A claimed method of preventing   |   |
| CC              | or inhibiting cancer involves administering a cancer peptide, with or     |   |
| CC              | without an HLA molecule. The cancer peptides form part of, or are derived |   |
| CC              | from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |   |
| CC              | sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical   |   |
| CC              | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |   |
| CC              | prostate, ovarian, pancreatic and thyroid cancers                         |   |
| XX              |   |   |
| SQ              | Sequence 10 AA;   |   |
|                 |   |   |
|                 | Alignment Scores:   |   |
|                 | Pred. No.: 153 Length: 10   |   |
|                 | Score: 10.00 Matches: 10  |   |
|                 | Percent Similarity: 100.00% Conservative: 0                               |   |
|                 | Best Local Similarity: 100.00% Mismatches: 0                              |   |
|                 | Query Match: 5.56% Indels: 0  |   |
|                 | DB: 1 Gaps: 0   |   |
|                 |   |   |
|                 | US-10-023-182-1 (1-752) x AAV05991 (1-10)                                 |   |
| CY              | 561 TTTTGGCTCAGCGTCCTCCCTCAGGAGGAGAG 590                                  |   |
|                 |   |   |
| Db              | 1 PheLeuAlaGlnProPseSerIyGlnArg 10  |   |
|                 |   |   |
|                 | RESULT 153  |   |
| ID              | AAV06006 standard; peptide; 10 AA.  |   |
| AC              | AAV06006;   |   |
| XX              |   |   |
| DT              | 16-AUG-1999 (first entry)   |   |
| XX              |   |   |
| DE              | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |   |
| XX              |   |   |
| KM              | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |   |
| KW              | leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;          |   |
| KM              | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |   |
| KW              | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |   |
| KM              | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |   |
| KW              | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |   |
| KM              | vaccine; human leukocyte antigen; HLA.                                    |   |
| XX              |   |   |
| OS              | Homo sapiens.   |   |

XX MN MO9918206-A2.  
XX PD 15-APR-1999.  
XX PF 21-SEP-1998; 98WO-US019609.  
XX PR 08-OCT-1997; 97US-0061428P.  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX PA Wang RF, Rosenberg SA;  
XX PI WPI, 1999-277270/23.  
XX PT Cancer antigen NY ESO1/CAG-3.  
XX PS Example 10; Page 42; 88pp; English.  
XX  
CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
CC AA55859). 30 Epitopes (see AA505988-Y06017) were identified. The present  
CC peptide (ranked 19) corresponds to amino acid residues 157-166 of CAG-1  
CC ORF1 (see AA505965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AA505967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 10 AA;  
  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AA506006 (1-10)  
QY 522 TCCTGTGATGTGATCAGCAGTCTT 551  
|||  
Db 1 SerLeuLeuMetTrpIleThrGlnCysPhe 10  
  
RESULT 154  
AA506013  
ID AA506013 standard; peptide; 10 AA.  
XX  
XX AA506013;  
XX  
XX 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
XX vaccine; human leukocyte antigen; HLA.  
XX  
XX Homo sapiens.  
XX  
XX WO9918206-A2.  
XX  
XX 15-APR-1999.

|            |   |                |                 |
|------------|---|----------------|-----------------|
| XX         | 21-SEP-1998;  | 98WO-US019609. |                 |
| PF         | 08-OCT-1997;  | 97US-0061428P. |                 |
| XX         |   |                |                 |
| PR         | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |                |                 |
| PA         |   |                |                 |
| XX         |   |                |                 |
| PI         | Wang RF, Rosenberg SA;  |                |                 |
| XX         |   |                |                 |
| XX         | WPI; 1999-277270/23.  |                |                 |
| DR         |   |                |                 |
| XX         |   |                |                 |
| XX         | Cancer antigen NY ESO1/CAG-3.   |                |                 |
| PT         |   |                |                 |
| XX         |   |                |                 |
| PS         | Example 10; Page 42; 88pp; English.                                       |                |                 |
| XX         |   |                |                 |
| CC         | This peptide was identified as an HLA peptide motif following a screen    |                |                 |
| CC         | for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see        |                |                 |
| CC         | AA585899). 30 Epitopes (see AA05988-Y06017) were identified. The present  |                |                 |
| CC         | peptide (ranked 26) corresponds to amino acid residues 91-100 of CAG-1    |                |                 |
| CC         | ORF1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of   |                |                 |
| CC         | eliciting an antigen specific immune response by T cells. Cancer peptides |                |                 |
| CC         | (see AA05967-87) derived from CAG-3, portions of CAG-3 and their          |                |                 |
| CC         | variants, are useful as cancer vaccines. A claimed method of preventing   |                |                 |
| CC         | or inhibiting cancer involves administering a cancer peptide, with or     |                |                 |
| CC         | without an HLA molecule. The cancer peptides form part of, or are derived |                |                 |
| CC         | from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |                |                 |
| CC         | sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical    |                |                 |
| CC         | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |                |                 |
| CC         | prostate, ovarian, pancreatic and thyroid cancers                         |                |                 |
| XX         |   |                |                 |
| SQ         | Sequence 10 AA;   |                |                 |
|            |   |                |                 |
|            | Alignment Scores:   |                |                 |
|            | Pred. No.:  | 153            | Length: 10      |
|            | Score:  | 10.00          | Matches: 10     |
|            | Percent Similarity:   | 100.00%        | Conservative: 0 |
|            | Best Local Similarity:  | 100.00%        | Mismatches: 0   |
|            | Query Match:  | 5.56%          | Indels: 0       |
|            | DB:   | 1              | Gaps: 0         |
|            |   |                |                 |
|            | US-10-023-182-1 (1-752) x AA06013 (1-10)                                  |                |                 |
|            |   |                |                 |
| QY         | 324 TACCTGCGCATGCGCTTGGCGAGACCCGANG 353                                   |                |                 |
|            |   |                |                 |
| DB         | 1 TyrlenuLamwPrProheaLthrProWet 10  |                |                 |
|            |   |                |                 |
| RESULT 155 |   |                |                 |
| ID         | AA05990 standard; peptide; 10 AA.   |                |                 |
| XX         |   |                |                 |
| AC         | AA05990;  |                |                 |
| XX         |   |                |                 |
| DT         | 16-AUG-1999 (first entry)   |                |                 |
| XX         |   |                |                 |
| DE         | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |                |                 |
| KM         | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |                |                 |
| KM         | leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;          |                |                 |
| KM         | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |                |                 |
| KM         | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |                |                 |
| KM         | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |                |                 |
| KM         | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |                |                 |
| XX         | vaccine; human leukocyte antigen; HLA.                                    |                |                 |
| XX         |   |                |                 |
| OS         | Homo sapiens.   |                |                 |
| XX         |   |                |                 |
| PN         | W09918206-A2.   |                |                 |
| XX         |   |                |                 |
| PD         | 15-APR-1999.  |                |                 |
| XX         |   |                |                 |
| PF         | 21-SEP-1998;  | 98WO-US019609. |                 |
| XX         |   |                |                 |
| PR         | 08-OCT-1997;  | 97US-0061428P. |                 |
| XX         |   |                |                 |

|          |   |
|----------|---|
| PA       | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| XX       |   |
| F1       | Wang RF, Rosenberg SA;  |
| XX       |   |
| DR       | WPI, 1999-277270/23.  |
| XX       |   |
| PT       | Cancer antigen NY ESO1/CAG-3.   |
| XX       |   |
| PS       | Example 10; Page 42; 88pp; English.                                       |
| XX       |   |
| CC       | This peptide was identified as an HLA peptide motif following a screen    |
| CC       | for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see        |
| CC       | AA58599). 30 Epitopes (see AA505988-Y06017) were identified. The present  |
| CC       | peptide (ranked 3) corresponds to amino acid residues 97-106 of CAG-1     |
| CC       | ORF1 (see AA505965). CAG-1 is a new and potent tumour antigen capable of  |
| CC       | eliciting an antigen specific immune response by T cells. Cancer peptides |
| CC       | (see AA50567-87) derived from CAG-3, portions of CAG-3 and their          |
| CC       | variants, are useful as cancer vaccines. A claimed method of preventing   |
| CC       | or inhibiting cancer involves administering a cancer peptide, with or     |
| CC       | without an HLA molecule. The cancer peptides form part of, or are derived |
| CC       | from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |
| CC       | sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical   |
| CC       | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |
| CC       | prostate, ovarian, pancreatic and thyroid cancers                         |
| XX       |   |
| SQ       | Sequence 10 AA;   |
|          |   |
|          | Alignment Scores:   |
|          |   |
|          | Pred. No.: 153 length: 10   |
|          | Score: 10.00 Matches: 10  |
|          | Percent Similarity: 100.00% Conservative: 0                               |
|          | Best Local Similarity: 100.00% Mismatches: 0                              |
|          | Query Match: 5.56% Indels: 0  |
|          | DB: 1 Gaps: 0   |
|          |   |
|          | US-10-023-182-1 (1-752) x AA505990 (1-10)                                 |
| OY       | 342 GCGACACCCATGGAAGACAGAGCTGGCCCGC 371                                   |
|          |   |
| Db       | 1 ALaThrPromerGluAlaGluLeuAlaArg 10                                       |
|          |   |
|          | RESULT 156  |
| AA506016 |   |
| ID       | AA506016 standard; peptide; 10 AA.  |
| XX       |   |
| AC       | AA506016;   |
| XX       |   |
| DT       | 16-AUG-1999 (first entry)   |
| XX       |   |
| DE       | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |
| XX       |   |
| XX       |   |
| NY       | ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;             |
| KW       | leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;         |
| KW       | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KW       | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KW       | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KW       | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |
| KW       | vaccine; human leukocyte antigen; HLA.                                    |
| XX       |   |
| OS       | Homo sapiens.   |
| XX       |   |
| PN       | WO9918206-A2.   |
| PD       | 15-APR-1999.  |
| XX       |   |
| PF       | 21-SEP-1998; 98WO-US019609.   |
| XX       |   |
| PR       | 08-OCT-1997; 97US-0061428B.   |
| XX       |   |
| PA       | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| XX       |   |
| F1       | Wang RF, Rosenberg SA;  |

|   |   |
|---|---|
| XX  | WPI; 1999-277270/23.  |
| DR  |   |
| XX  |   |
| PT  | Cancer antigen NY ESO1/CAG-3.   |
| XX  |   |
| PS  | Example 10; Page 42; 88pp; English.                                       |
| CC  |   |
| CC  | This peptide was identified as an HLA peptide motif following a screen    |
| CC  | for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see        |
| CC  | AA58599). 30 Epitopes (see AA59588-Y06017) were identified. The present   |
| CC  | peptide (ranked 29) corresponds to amino acid residues 144-153 of CAG-1   |
| CC  | ORF1 (see AA595965). CAG-1 is a new and potent tumour antigen capable of  |
| CC  | eliciting an antigen specific immune response by T cells. Cancer peptides |
| CC  | (see AA59567-87) derived from CAG-3, portions of CAG-3 and their          |
| CC  | variants, are useful as cancer vaccines. A claimed method of preventing   |
| CC  | or inhibiting cancer involves administering a cancer peptide, with or     |
| CC  | without an HLA molecule. The cancer peptides form part of, or are derived |
| CC  | from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |
| CC  | sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical    |
| CC  | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |
| CC  | prostate, ovarian, pancreatic and thyroid cancers                         |
| XX  |   |
| SO  | Sequence 10 AA:   |
| Alignment Scores:                         |   |
| Pred. No.:                                | 153   |
| Score:                                    | 10.00   |
| Percent Similarity:                       | 100.00%   |
| Best local Similarity:                    | 100.00%   |
| Query Match:                              | 5.56%   |
| DB:                                       | 1   |
|   | Gaps: 0   |
| US-10-023-182-1 (1-752) x AA596016 (1-10) |   |
| Qy  | 483 CAACGTCAGCTCCATCCAGTCGCTGTC 512                                       |
| Db  | 1 GlnLeuGlnLeuSerIleSerIleSerIle 10                                       |
| RESULT 157                                |   |
| ID  | AA595994  |
| AA595994                                  | standard; peptide; 10 AA.   |
| XX  |   |
| XX  | AA595994;   |
| XX  |   |
| DT  | 16-AUG-1999 (first entry)   |
| XX  |   |
| DE  | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |
| XX  |   |
| KW  | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |
| KW  | leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;          |
| KW  | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KW  | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KW  | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KW  | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |
| KW  | vaccine; human leukocyte antigen; HLA.                                    |
| XX  |   |
| OS  | Homo sapiens.   |
| XX  |   |
| FN  | MO9918206-A2.   |
| XX  |   |
| PD  | 15-APR-1999.  |
| XX  |   |
| PF  | 21-SEP-1998; 98WO-US019609.   |
| XX  |   |
| PR  | 08-OCT-1997; 97US-0061428P.   |
| XX  |   |
| PA  | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| XX  |   |
| PI  | Wang RF, Rosenberg SA;  |
| XX  |   |
| DR  | WPI; 1999-277270/23.  |
| XX  |   |
| PT  | Cancer antigen NY ESO1/CAG-3.   |

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XX Example 10; Page 42; 88bp; English.
PS
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA5988-Y06017) were identified. The present
CC peptide (ranked 7) corresponds to amino acid residues 68-77 of CAG-1 ORF1
CC (see AA59965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AA5967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
CC
SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AA59965 (1-10)
QY 255 GCGGCTTCAGGCTGAATGATGTCGACA 284
DB 1 AlaAlaSerGlyLeuAnsGlyCysCysArg 10
RESULT 158
AA59965 standard; peptide, 10 AA.
AC AA59965;
XX
DT 16-AUG-1999 (first entry)
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX Wang RF, Rosenberg SA;
XX WPI, 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX Example 10; Page 42; 88bp; English.
XX This peptide was identified as an HLA peptide motif following a screen

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CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA5988-Y06017) were identified. The present
CC peptide (ranked 10) corresponds to amino acid residues 153-162 of CAG-1
CC ORF1 (see AA59965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AA5967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
CC
SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AA59965 (1-10)
QY 510 CTCGAGCAGCTTTCCTGTTGATGTCGATC 539
DB 1 LeuGlnGlnLeuSerLeuLeuMetTrpIle 10
RESULT 159
AA59965 standard; peptide, 10 AA.
ID AA59965;
XX
AC AA59965;
XX
DT 16-AUG-1999 (first entry)
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX Wang RF, Rosenberg SA;
XX WPI, 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX Example 10; Page 42; 88bp; English.
XX This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA5988-Y06017) were identified. The present
CC peptide (ranked 16) corresponds to amino acid residues 158-167 of CAG-1
CC ORF1 (see AA59965). CAG-1 is a new and potent tumour antigen capable of

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CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers

XX  
 SQ Sequence 10 AA;

Alignment Scores:  
 Pred. No.: 153 Length: 10  
 Score: 10.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY06003 (1-10)

OY 525 CTGTTGATGTCGATCAGCGAGTCTTCTG 554  
 |||||  
 DB 1 LeuLeuMetTPIetInGInCysPheLeu 10

RESULT 160  
 AAY06015  
 ID AAY06015 standard; peptide: 10 AA.  
 XX  
 AC AAY06015;  
 XX  
 DT 16-AUG-1999 (first entry)  
 DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
 XX  
 KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; human leukocyte antigen; HLA.

OS Homo sapiens.  
 XX  
 PN W09918206-A2.  
 XX  
 PD 15-APR-1999.  
 XX  
 PF 21-SEP-1998; 98WO-US019609.  
 XX  
 PR 08-OCT-1997; 97US-0061428P.  
 XX  
 PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 XX  
 PI Wang RF, Rosenberg SA;  
 XX  
 WPI; 1999-277270/23.  
 XX  
 PT Cancer antigen NY ESO1/CAG-3.  
 XX  
 PS Example 10; Page 42; 88pp; English.

CC This peptide was identified as an HLA peptide motif following a screen  
 CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AAY58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present  
 CC peptide (ranked 28) corresponds to amino acid residues 53-62 of CAG-1  
 CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or

CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers

XX  
 SQ Sequence 10 AA;

Alignment Scores:  
 Pred. No.: 153 Length: 10  
 Score: 10.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY06015 (1-10)

OY 210 GCTCGGAGCGGAGGAGGCGCCCGCGG 239  
 |||||  
 DB 1 AlaSerGIProGIyGIyGIyAlaProArg 10

RESULT 161  
 AAY06063  
 ID AAY06063 standard; peptide: 10 AA.  
 XX  
 AC AAY06063;  
 XX  
 DT 16-AUG-1999 (first entry)  
 DE Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-72.  
 XX  
 KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; cytotoxic T lymphocyte; CTL.

OS Homo sapiens.  
 XX  
 PN W09918206-A2.  
 XX  
 PD 15-APR-1999.  
 XX  
 PF 21-SEP-1998; 98WO-US019609.  
 XX  
 PR 08-OCT-1997; 97US-0061428P.  
 XX  
 PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 XX  
 PI Wang RF, Rosenberg SA;  
 XX  
 WPI; 1999-277270/23.  
 XX  
 PT Cancer antigen NY ESO1/CAG-3.  
 XX  
 PS Example 10; Page 45; 88pp; English.

CC Peptide ESO10-72 corresponds to amino acid residues 72-81 of human NY ESO  
 CC -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. It was examined  
 CC for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of  
 CC granulocyte macrophage colony stimulating factor. Cancer peptides (see  
 CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,  
 CC are useful as cancer vaccines. A claimed method of preventing or  
 CC inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers

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XX      SQ      Sequence 10 AA;
Alignment Scores:
Pred. No.:      153      Length:      10
Score:          10.00    Matches:      10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match:    5.56%   Indels:      0
DB:             1      Gaps:        0

US-10-023-182-1 (1-752) x AAY06063 (1-10)
QY      267 CTGAATGATGCTGCAGATGCGGCGCAGG 296
Db      1 LeuAenGLYCYSCYArGcYseGLyAlaArG 10

RESULT 162
AAY05980 ID AAY05980 standard; peptide, 10 AA.
XX      AC      AAY05980;
XX      XX      16-AUG-1999 (first entry)
DT      XX
DE      Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide ESO10-127.
XX      XX
KW      NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW      leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW      metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW      uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW      cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW      liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW      vaccine.
XX      XX
OS      Homo sapiens.
XX      OS
PN      MO9918206-A2.
XX      XX
PD      15-APR-1999.
XX      XX
PF      21-SEP-1998; 98WO-US019609.
XX      XX
PR      08-OCT-1997; 97US-0061428P.
XX      XX
PA      (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX      XX
PI      Wang RF, Rosenberg SA;
XX      PI
DR      WPI; 1999-277270/23.
XX      DR
XX      Cancer antigen NY ESO1/CAG-3.
XX      XX
PS      Claim 17; Page 64; 88pp; English.
XX      PS
XX      This sequence represents cancer peptide ESO10-127 that corresponds to
XX      amino acid residues 127-136 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see
XX      AAY05965), a new and potent tumour antigen capable of eliciting an
XX      antigen specific immune response by T cells. Cancer peptides derived from
XX      CAG-3 ORF1, CAG-3 ORF2 (see AAY05966), portions of them and their
XX      variants (see AAY05967-87), are useful as cancer vaccines that protect
XX      against cancer. The invention provides: vectors and host cells (also
XX      useful as vaccines); a method of diagnosis of cancer or precancer; a
XX      transgenic animal; antisense oligonucleotides that inhibit expression of
XX      the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
XX      cancer peptide; useful in diagnostic and detection assays; and methods
XX      for preventing or inhibiting cancer by administering a cancer peptide,
XX      with or without an HLA molecule. The cancer peptides form part of, or are
XX      derived from, cancers such as primary or metastatic melanoma, thymoma,
XX      lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
XX      cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
XX      as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is
XX      treated by inducing cancer-specific T cells in vitro for subsequent

```

```

CC      return to a patient
XX      SQ      Sequence 10 AA;
Alignment Scores:
Pred. No.:      153      Length:      10
Score:          10.00    Matches:      10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match:    5.56%   Indels:      0
DB:             1      Gaps:        0

US-10-023-182-1 (1-752) x AAY05980 (1-10)
QY      432 ACTGTGTCGCGCAATAGTACTATCCGA 461
Db      1 ThrValSerGLYArnIleLeuThrIleArG 10

RESULT 163
AAY05969 ID AAY05969 standard; peptide, 10 AA.
XX      AC      AAY05969;
XX      XX      16-AUG-1999 (first entry)
DT      XX
DE      Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide.
XX      XX
KW      NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW      leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW      metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW      uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW      cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW      liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW      vaccine.
XX      XX
OS      Homo sapiens.
XX      OS
PN      MO9918206-A2.
XX      XX
PD      15-APR-1999.
XX      XX
PF      21-SEP-1998; 98WO-US019609.
XX      XX
PR      08-OCT-1997; 97US-0061428P.
XX      XX
PA      (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX      XX
PI      Wang RF, Rosenberg SA;
XX      PI
DR      WPI; 1999-277270/23.
XX      DR
XX      N-PSDB; AAX58600.
XX      XX
PT      Cancer antigen NY ESO1/CAG-3.
XX      PT
XX      Claim 11; Page 64; 88pp; English.
XX      PS
XX      The present sequence represents a cancer peptide that is based on amino
XX      acid residues 55-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see AAY05965),
XX      a new and potent tumour antigen capable of eliciting an antigen specific
XX      immune response by T cells. Cancer peptides derived from CAG-3 ORF1, CAG-
XX      3 ORF2 (see AAY05966), portions of them and their variants (see AAY05967-
XX      87), are useful as cancer vaccines that protect against cancer. The
XX      invention provides: vectors and host cells (also useful as vaccines); a
XX      method of diagnosis of cancer or precancer; a transgenic animal; a
XX      antisense oligonucleotides that inhibit expression of the cancer peptide;
XX      or tumour antigen; antibodies reacting with a CAG-3 cancer peptide,
XX      useful in diagnostic and detection assays; and methods for preventing or
XX      inhibiting cancer by administering a cancer peptide, with or without an
XX      HLA molecule. The cancer peptides form part of, or are derived from,
XX      cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX      sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical

```

CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by  
CC inducing cancer-specific T cells in vitro for subsequent return to a  
CC patient  
XX  
SQ Sequence 10 AA;  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY05969 (1-10)  
QY 210 GCCTCGGGCCGAGAGCGCCCGCG 239  
Db 1 AAserGIyProGIyGIyAlaProIarG 10  
RESULT 164  
AAY05993  
ID AAY05993 standard; peptide; 10 AA.  
XX  
AC AAY05993;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW Leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX  
PN MO9918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX  
PS Example 10; Page 42; 88pp; English.  
XX  
CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
CC AA58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present  
CC peptide (ranked 6) corresponds to amino acid residues 77-86 of CAG-1 ORF1  
CC (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers

XX<sup>1</sup> SQ Sequence 10 AA;  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY05993 (1-10)  
QY 282 AGATCGGGCCGAGAGCGCCG 311  
Db 1 ArgCysGIyAlaArgGIyProGIuSerArg 10  
RESULT 165  
AAY06000  
ID AAY06000 standard; peptide; 10 AA.  
XX  
AC AAY06000;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW Leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX  
PN MO9918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX  
PS Example 10; Page 42; 88pp; English.  
XX  
CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see  
CC AA58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present  
CC peptide (ranked 13) corresponds to amino acid residues 131-140 of CAG-1  
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 10 AA;  
Alignment Scores:

```

Pred. No.:      153      Length:      10
Score:          10.00    Matches:      10
Percent Similarity: 100.00%  Conservative: 0
Best Local Similarity: 100.00%  Mismatches: 0
Query Match:    5.56$      Indels:      0
DB:            1          Gaps:         0
US-10-023-182-1 (1-752) x AAY06000 (1-10)

OY      444 AACATACGACTATCCGACTGCTGCA 473
      |||||
      1 AenlleuvmrllleargleuhtlrAla1a 10

RESULT 166
AAY06005 ID AAY06005 standard; peptide; 10 AA.
XX AC AAY06005;
XX DT 16-AUG-1999 (first entry)
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX KW vaccine; human leukocyte antigen; HLA.
XX OS Homo sapiens.
XX PN WO9918206-A2.
XX PD 15-APR-1999.
XX PF 21-SEP-1998; 98WO-US019609.
XX PR 08-OCT-1997; 97US-0061428P.
XX PT (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Wang RF, Rosenberg SA;
XX DR WPI; 1999-277270/23.
XX PS Cancer antigen NY ESO1/CAG-3.
XX PS Example 10; Page 42; 88pp; English.
XX CC This peptide was identified as an HLA peptide motif following a screen
XX CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
XX CC AA858599). 30 Epitopes (see AA05988-Y06017) were identified. The present
XX CC peptide (ranked 18) corresponds to amino acid residues 161-170 of CAG-1
XX CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
XX CC eliciting an antigen specific immune response by T cells. Cancer peptides
XX CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
XX CC variants, are useful as cancer vaccines. A claimed method of preventing
XX CC or inhibiting cancer involves administering a cancer peptide, with or
XX CC without an HLA molecule. The cancer peptides form part of, or are derived
XX CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
XX CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX CC prostate, ovarian, pancreatic and thyroid cancers
XX SQ Sequence 10 AA;

Alignment Scores:
Pred. No.:      153      Length:      10
Score:          10.00    Matches:      10
Percent Similarity: 100.00%  Conservative: 0
Best Local Similarity: 100.00%  Mismatches: 0
Query Match:    100.00%      Indels:      0
DB:            0          Gaps:         0
US-10-023-182-1 (1-752) x AAY06000 (1-10)

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Query Match:    5.56$      Indels:      0
DB:            1          Gaps:         0
US-10-023-182-1 (1-752) x AAY06005 (1-10)

OY      534 TGGATCAGCAGTGTCTTTGCGCGTGT 563
      |||||
      1 TrrllethrglncysphleuPrrvalPhe 10

RESULT 167
AAY06008 ID AAY06008 standard; peptide; 10 AA.
XX AC AAY06008;
XX DT 16-AUG-1999 (first entry)
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX KW vaccine; human leukocyte antigen; HLA.
XX OS Homo sapiens.
XX PN WO9918206-A2.
XX PD 15-APR-1999.
XX PF 21-SEP-1998; 98WO-US019609.
XX PR 08-OCT-1997; 97US-0061428P.
XX PT (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Wang RF, Rosenberg SA;
XX DR WPI; 1999-277270/23.
XX PS Cancer antigen NY ESO1/CAG-3.
XX PS Example 10; Page 42; 88pp; English.
XX CC This peptide was identified as an HLA peptide motif following a screen
XX CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
XX CC AA858599). 30 Epitopes (see AA05988-Y06017) were identified. The present
XX CC peptide (ranked 21) corresponds to amino acid residues 72-81 of CAG-1
XX CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
XX CC eliciting an antigen specific immune response by T cells. Cancer peptides
XX CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
XX CC variants, are useful as cancer vaccines. A claimed method of preventing
XX CC or inhibiting cancer involves administering a cancer peptide, with or
XX CC without an HLA molecule. The cancer peptides form part of, or are derived
XX CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
XX CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX CC prostate, ovarian, pancreatic and thyroid cancers
XX SQ Sequence 10 AA;

Alignment Scores:
Pred. No.:      153      Length:      10
Score:          10.00    Matches:      10
Percent Similarity: 100.00%  Conservative: 0
Best Local Similarity: 100.00%  Mismatches: 0
Query Match:    5.56$      Indels:      0
DB:            1          Gaps:         0
US-10-023-182-1 (1-752) x AAY06008 (1-10)

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Db 1 LeuamslGlyCysarGcylAlaArg 10

267 CTGAATGAGCTGCAGAGCCGGCGCACG 296

YY |||||||

RESULT 168

AAV06055 standard; peptide; 10 AA.

ID AAV06055

AC AAV06055;

XX

DT 16-AUG-1999 (first entry)

XX

DE Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-34.

XX

KM NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; cytotoxic T lymphocyte; CTL.  
XX

OS Homo sapiens.

XX

PN W09J18206-A2.

XX

PD 15-APR-1999.

XX

PF 21-SEP-1998; 98MO-US019609.

XX

PR 08-OCT-1997; 97US-0061428P.

XX

PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.

XX

PI Wang RF, Rosenberg SA:  
DR WPI; 1999-277270/23.  
XX

PT Cancer antigen NY ESO1/CAG-3.  
PS  
XX Example 10; Page 45; 88pp; English.

CC Peptide ESO10-34 corresponds to amino acid residues 134-143 of human NY  
CC ESO-1/CAG-3 ORF (see AAY05965), a new and potent tumour antigen capable  
CC of eliciting an antigen specific immune response by T cells. It was  
CC examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as  
CC release of granulocyte macrophage colony stimulating factor. Cancer  
CC peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and  
CC their variants, are useful as cancer vaccines. A claimed method of  
CC preventing or inhibiting cancer involves administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers  
XX

SQ Sequence 10 AA:

Alignment Scores:

Pred. No.: 153 Length: 10

Score: 10.00 Matches: 10

Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.56% Indels: 0

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY06055 (1-10)

YY 453 ACTATCGACTGACTGCTGAGAGCAACGCC 482

Db 1 ThrilleargLeuthrilaalaaphSlaArg 10

|   |   |
|---|---|
| RESULT 169                                |   |
| AAV06069                                  | ID# AAV06069 standard; peptide; 10 AA.                                    |
| XX  |   |
| AC  | AAV06069;   |
| XX  |   |
| DT  | 16-AUG-1999 (first entry)   |
| DE  |   |
| XX  | Human cancer antigen NY ESO-1/CAG-3 peptide.                              |
| XX  |   |
| KW  | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |
| KM  | leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;          |
| KW  | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KM  | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KW  | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KM  | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |
| XX  | vaccine; cytotoxic T lymphocyte; CTL.                                     |
| OS  |   |
| XX  | Homo sapiens.   |
| PN  |   |
| EN  | W09918206-AA2.  |
| PD  |   |
| PD  | 15-APR-1999.  |
| XX  |   |
| PE  | 21-SEP-1998; 98WC-US019609.   |
| PR  |   |
| PR  | 08-OCT-1997; 97US-0061428P.   |
| PA  | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| XX  |   |
| PI  | Wang RF, Rosenberg SA;  |
| XX  |   |
| DR  | WPI; 1999-277270/23.  |
| PT  |   |
| Cancer antigen NY ESO1/CAG-3.             |   |
| PS  |   |
| Example 11; Page 50; 86bp; English.       |   |
| XX  |   |
| CC  | This peptide corresponds to amino acid residues 54-63 of human NY ESO-    |
| CC  | 1/CAG-3 ORF1 (see AAY05965), a new and potent tumor antigen that is       |
| CC  | capable of eliciting an antigen specific immune response by T cells.      |
| CC  | Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3   |
| CC  | and their variants, are useful as cancer vaccines. A claimed method of    |
| CC  | preventing or inhibiting cancer involves administering a cancer peptide,  |
| CC  | with or without an HLA molecule. The cancer peptides form part of, or are |
| CC  | derived from, cancers such as primary or metastatic melanoma, thymoma,    |
| CC  | lymphoma, sarcoma, lung cancer, liver cancer, leukemia, uterine cancer,   |
| CC  | cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such   |
| CC  | as breast, prostate, ovarian, pancreatic and thyroid cancers              |
| XX  |   |
| SQ  | Sequence 10 AA;   |
| Alignment Scores:                         |   |
| Pred. NO.:                                | 153   |
| Score:                                    | 10.00   |
| Percent Similarity:                       | 100.00%   |
| Best Local Similarity:                    | 100.00%   |
| Query Match:                              | 5.56%   |
| DB:                                       | 1 Gaps: 0   |
| US-10-023-182-1 (1-752) x AAY06069 (1-10) |   |
| OY  | 213 TCGGGCGCGAGAGCGCCCCCGGGGGT 242  |
| Db  | 1 SerGIYPrgoIyGIyGIyAlaIraIraGtoly 10                                     |
| RESULT 170                                |   |
| AAV05992                                  | ID# AAY05992 standard; peptide; 10 AA.                                    |
| XX  |   |
| AC  | AAV05992;   |
| XX  |   |
| DT  | 16-AUG-1999 (first entry)   |

```
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
DE
XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW Leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
XX Homo sapiens.
OS
XX WO9918206-A2.
PN
XX 15-APR-1999.
PD
XX 21-SEP-1998; 98WO-US019609.
PF
XX 08-OCT-1997; 97US-0061428P.
PR
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA
XX Wang RF, Rosenberg SA;
PI
XX WPI; 1999-277270/23.
DR
XX
XX Cancer antigen NY ESO1/CAG-3.
PT
XX
XX Example 10; Page 42; 88pp; English.
PS
XX This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 5) corresponds to amino acid residues 98-107 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
CC
XX
XX Sequence 10 AA;
SQ
XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX Db: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAY05992 (1-10)
OY 345 ACACCCATGAGCAGAGCTGSCCGCAGG 374
DB 1 ThrPrometGluAlaGluLeuAlaArg 10
RESULT 171
ID AAY05998 standard; peptide; 10 AA.
XX
XX AAY05998;
AC
XX
XX 16-AUG-1999 (first entry)
DT
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
DE
XX Human cancer antigen NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;
```

```
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
XX Homo sapiens.
OS
XX WO9918206-A2.
PN
XX 15-APR-1999.
PD
XX 21-SEP-1998; 98WO-US019609.
PF
XX 08-OCT-1997; 97US-0061428P.
PR
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA
XX Wang RF, Rosenberg SA;
PI
XX WPI; 1999-277270/23.
DR
XX
XX Cancer antigen NY ESO1/CAG-3.
PT
XX
XX Example 10; Page 42; 88pp; English.
PS
XX This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AAX58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present
CC peptide (ranked 11) corresponds to amino acid residues 115-124 of CAG-1
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
CC
XX
XX Sequence 10 AA;
SQ
XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX Db: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAY05998 (1-10)
OY 396 CCGCTTCCCGTCCAGGCGGTCTTGTGAG 425
DB 1 ProleuProValProGlyValLeuLeuLys 10
RESULT 172
ID AAY06009 standard; peptide; 10 AA.
XX
XX AAY06009;
AC
XX
XX 16-AUG-1999 (first entry)
DT
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
DE
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW Leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
```

KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KM vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX  
PN W09918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX  
PS Example 10; Page 42; 88pp; English.  
XX  
CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
CC AA58599). 30 Epitopes (see AA5988-Y06017) were identified. The present  
CC peptide (ranked 22) corresponds to amino acid residues 154-163 of CAG-1  
CC ORF1 (see AA5965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AA5967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptide form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AA596009 (1-10)  
QY 513 CAGCAGCTTTCCTGTTGATGTGATCAG 542  
DB 1 GINGINLeuSerLeuLeuMetTrpIleThr 10  
RESULT 173  
AA595989  
ID AA595989 standard; peptide; 10 AA.  
XX  
AC AA595989;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
KM NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KM leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KM vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.

XX  
PN W09918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX  
PS Example 10; Page 42; 88pp; English.  
XX  
CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see  
CC AA58599). 30 Epitopes (see AA5988-Y06017) were identified. The present  
CC peptide (ranked 2) corresponds to amino acid residues 134-143 of CAG-1  
CC ORF1 (see AA5965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AA5967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AA595989 (1-10)  
QY 453 ACTATCGACTGACTGCTGCAGACCAACGC 482  
DB 1 ThrIleArgLeuThrAlaAlaAspHisArg 10  
RESULT 174  
AA596004  
ID AA596004 standard; peptide; 10 AA.  
XX  
AC AA596004;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
KM NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KM leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KM vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX  
PN W09918206-A2.  
XX  
PD 15-APR-1999.

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XX 21-SEP-1998; 98WO-US019609.
PF 08-OCT-1997; 97US-0061428P.
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA Wang RF, Rosenberg SA;
XX WPI; 1999-277270/23.
XX Cancer antigen NY ESO1/CAG-3.
PT Example 10; Page 42; 88pp; English.
XX This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA505988-Y06017) were identified. The present
CC peptide (ranked 17) corresponds to amino acid residues 87-96 of CAG-1
CC ORF1 (see AA505965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AA505967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AA506004 (1-10)
QY 312 CTGCTTGAGTTTACCTGCGCATGCTTTC 341
Db 1 LeuLeuGluPheTyrLeuAlaMetProPhe 10
RESULT 175
AA506017
ID AA506017 standard; peptide; 10 AA.
XX
AC AA506017;
XX
XX 16-AUG-1999 (first entry)
DT Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
XX 15-APR-1999.
PD
XX 21-SEP-1998; 98WO-US019609.
PF
XX 08-OCT-1997; 97US-0061428P.
PR
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XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA Wang RF, Rosenberg SA;
XX WPI; 1999-277270/23.
XX Cancer antigen NY ESO1/CAG-3.
PT Example 10; Page 42; 88pp; English.
XX This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA505988-Y06017) were identified. The present
CC peptide (ranked 30) corresponds to amino acid residues 133-142 of CAG-1
CC ORF1 (see AA505965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AA505967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AA506017 (1-10)
QY 450 CTGACTATCGACTGACTGCTGCAGACCAC 479
Db 1 LeuThrIleArgLeuThrAlaAlaAspHis 10
RESULT 176
AA505988
ID AA505988 standard; peptide; 10 AA.
XX
AC AA505988;
XX
XX 16-AUG-1999 (first entry)
DT Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
KW vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
XX 15-APR-1999.
PD
XX 21-SEP-1998; 98WO-US019609.
PF
XX 08-OCT-1997; 97US-0061428P.
PR
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX Wang RF, Rosenberg SA;
PI
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XX DR WPI; 1999-277270/23.
XX PS Cancer antigen NY ESO1/CAG-3.
XX PS Example 10; Page 42; 88pp; English.
XX CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA05988-Y06017) were identified. The present
CC peptide (ranked 1) corresponds to amino acid residues 127-136 of CAG-1
CC ORF1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AA05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
XX SQ Sequence 10 AA;
XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AA05988 (1-10)
XX
XX QY 432 ACTGTGTCGGCAACACTGACTATCCGA 461
XX |||||
XX Db 1 ThrValSerGlyAsnIleLeuThrIleArg 10
XX
XX RESULT 177
XX AA06001
XX ID AA06001 standard; peptide; 10 AA.
XX AC AA06001;
XX XX
XX DT 16-AUG-1999 (first entry)
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX XX
XX KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX OS Homo sapiens.
XX PN WO9918206-A2.
XX PD 15-APR-1999.
XX PR 21-SEP-1998; 98WO-US019609.
XX PA 08-OCT-1997; 97US-0061428P.
XX PR (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Wang RF, Rosenberg SA;
XX XX
XX DR WPI; 1999-277270/23.
XX PT Cancer antigen NY ESO1/CAG-3.
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XX PS Example 10; Page 42; 88pp; English.
XX CC This peptide was identified as an HLA peptide motif following a screen
XX for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
XX AA58599). 30 Epitopes (see AA05988-Y06017) were identified. The present
XX peptide (ranked 14) corresponds to amino acid residues 126-135 of CAG-1
XX ORF1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of
XX eliciting an antigen specific immune response by T cells. Cancer peptides
XX (see AA05967-87) derived from CAG-3, portions of CAG-3 and their
XX variants, are useful as cancer vaccines. A claimed method of preventing
XX or inhibiting cancer involves administering a cancer peptide, with or
XX without an HLA molecule. The cancer peptides form part of, or are derived
XX from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
XX cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX prostate, ovarian, pancreatic and thyroid cancers
XX SQ Sequence 10 AA;
XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AA06001 (1-10)
XX
XX QY 429 TTCACGTGTCGGCAACACTGACTATC 458
XX |||||
XX Db 1 PheThrValSerGlyAsnIleLeuThrIle 10
XX
XX RESULT 178
XX AA06007
XX ID AA06007 standard; peptide; 10 AA.
XX AC AA06007;
XX XX
XX DT 16-AUG-1999 (first entry)
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX XX
XX KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX OS Homo sapiens.
XX PN WO9918206-A2.
XX PD 15-APR-1999.
XX PR 21-SEP-1998; 98WO-US019609.
XX PA 08-OCT-1997; 97US-0061428P.
XX PR (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX PI Wang RF, Rosenberg SA;
XX XX
XX DR WPI; 1999-277270/23.
XX PT Cancer antigen NY ESO1/CAG-3.
XX PS Example 10; Page 42; 88pp; English.
XX CC This peptide was identified as an HLA peptide motif following a screen
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CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AAX8599). 30 Epitopes (see AAY05988-Y06017) were identified. The present  
 CC peptide (ranked 20) corresponds to amino acid residues 93-102 of CAG-1  
 CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers

CC  
 CC SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAY06007 (1-10)

OY 330 GCCATGCTTTGGCGACACCCATGGAAGCA 359  
 DB 1 AlameTProPhaIaThProMetGluAla 10

RESULT 179  
 AAY06057  
 ID AAY06057 standard; peptide; 10 AA.

AC AAY06057;  
 XX  
 DT 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-170.  
 XX  
 XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; cytotoxic T lymphocyte; CTL.

OS Homo sapiens.  
 XX  
 XX WO9918206-A2.  
 XX  
 XX PD 15-APR-1999.  
 XX  
 XX PF 21-SEP-1998; 98WO-US019609.  
 XX  
 XX PR 08-OCT-1997; 97US-0061428P.  
 XX  
 XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 PA Wang RF, Rosenberg SA;  
 PI WPI, 1999-277270/23.  
 XX  
 XX Cancer antigen NY ESO1/CAG-3.  
 XX  
 XX Example 10; Page 45; 88pp; English.

CC Peptide ESO10-170 corresponds to amino acid residues 170-179 of human NY  
 CC ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable  
 CC of eliciting an antigen specific immune response by T cells. It was  
 CC examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as  
 CC release of granulocyte macrophage colony stimulating factor. Cancer

CC peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and  
 CC their variants, are useful as cancer vaccines. A claimed method of  
 CC preventing or inhibiting cancer involves administering a cancer peptide,  
 CC with or without an HLA molecule. The cancer peptides form part of, or are  
 CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
 CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  
 CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
 CC as breast, prostate, ovarian, pancreatic and thyroid cancers

CC  
 CC SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAY06057 (1-10)

OY 561 TTTTGGCTCAGCCTCCTCAGGCGAGAG 590  
 DB 1 PheLeuAlaGlnProPheSerGlyGlnArg 10

RESULT 180  
 AAY06060  
 ID AAY06060 standard; peptide; 10 AA.

AC AAY06060;  
 XX  
 DT 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-68.  
 XX  
 XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; cytotoxic T lymphocyte; CTL.

OS Homo sapiens.  
 XX  
 XX WO9918206-A2.  
 XX  
 XX PD 15-APR-1999.  
 XX  
 XX PF 21-SEP-1998; 98WO-US019609.  
 XX  
 XX PR 08-OCT-1997; 97US-0061428P.  
 XX  
 XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 PA Wang RF, Rosenberg SA;  
 PI WPI, 1999-277270/23.  
 XX  
 XX Cancer antigen NY ESO1/CAG-3.  
 XX  
 XX Example 10; Page 45; 88pp; English.

CC Peptide ESO10-68 corresponds to amino acid residues 68-77 of human NY ESO  
 CC -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. It was examined  
 CC for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of  
 CC granulocyte macrophage colony stimulating factor. Cancer peptides (see  
 CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,  
 CC are useful as cancer vaccines. A claimed method of preventing or  
 CC inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,

CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers

XX Sequence 10 AA;

SO Alignment Scores:

| Pred. No.:                     | Length: | Matches: | Conservative: | Mismatches: | Indels: | Gaps: |
|--------------------------------|---------|----------|---------------|-------------|---------|-------|
| Score: 10.00                   | 10      | 10       | 10            | 0           | 0       | 0     |
| Percent Similarity: 100.00%    |         |          |               |             |         |       |
| Best Local Similarity: 100.00% |         |          |               |             |         |       |
| Query Match: 5.56%             |         |          |               |             |         |       |

US-10-023-182-1 (1-752) x AAY06060 (1-10)

OY 255 GCGGTTGAGGCTGAATGATGCTGCA 284

Db 1 AlaIaSerGlyLeuAnGlyCysCysArg 10

RESULT 181

ID AAY06002 standard; peptide; 10 AA.

XX AAY06002;

DT 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.

XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; human leukocyte antigen; HLA.

OS Homo sapiens.

XX MO9918206-A2.

XX 15-APR-1999.

XX 21-SEP-1998; 98WO-US019609.

XX 08-OCT-1997; 97US-0061428P.

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

PI Wang RF, Rosenberg SA;

DR WPI; 1999-277270/23.

XX Cancer antigen NY ESO1/CAG-3.

PS Example 10; Page 42; 88pp; English.

XX This peptide was identified as an HLA peptide motif following a screen  
 CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AA58599). 30 Epitopes (see AAY05988-Y06017) were identified. The present  
 CC peptide (ranked 15) corresponds to amino acid residues 43-52 of CAG-1  
 CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers

SO Sequence 10 AA;

XX Alignment Scores:

| Pred. No.:                     | Length: | Matches: | Conservative: | Mismatches: | Indels: | Gaps: |
|--------------------------------|---------|----------|---------------|-------------|---------|-------|
| Score: 10.00                   | 10      | 10       | 10            | 0           | 0       | 0     |
| Percent Similarity: 100.00%    |         |          |               |             |         |       |
| Best Local Similarity: 100.00% |         |          |               |             |         |       |
| Query Match: 5.56%             |         |          |               |             |         |       |

US-10-023-182-1 (1-752) x AAY06002 (1-10)

OY 180 AGAGTCCCGGCGGCGAGGCGAGCAAGG 209

Db 1 ArgGlyProArgGlyAlaGlyAlaAlaArg 10

RESULT 182

ID AAY06056 standard; peptide; 10 AA.

XX AAY06056;

DT 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 peptide ESO10-97.

XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; cytotoxic T lymphocyte; CTL.

OS Homo sapiens.

XX MO9918206-A2.

XX 15-APR-1999.

XX 21-SEP-1998; 98WO-US019609.

XX 08-OCT-1997; 97US-0061428P.

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

PI Wang RF, Rosenberg SA;

DR WPI; 1999-277270/23.

XX Cancer antigen NY ESO1/CAG-3.

PS Example 10; Page 45; 88pp; English.

XX Peptide ESO10-97 corresponds to amino acid residues 97-106 of human NY  
 CC ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable  
 CC of eliciting an antigen specific immune response by T cells. It was  
 CC examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as  
 CC release of granulocyte macrophage colony stimulating factor. Cancer  
 CC peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and  
 CC their variants, are useful as cancer vaccines. A claimed method of  
 CC preventing or inhibiting cancer involves administering a cancer peptide,  
 CC with or without an HLA molecule. The cancer peptides form part of, or are  
 CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
 CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  
 CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
 CC as breast, prostate, ovarian, pancreatic and thyroid cancers

SO Sequence 10 AA;

XX Alignment Scores:

| Pred. No.:   | Length: | Matches: |
|--------------|---------|----------|
| Score: 10.00 | 10      | 10       |

Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY06056 (1-10)

QY 342 GCGACACCCGATGAAAGCAGAGCTGGCCGC 371  
 DB 1 AlAtnPromeTGlulhAgIuLeuAlaArg 10

RESULT 183

AAV52434  
 ID AAY52434 standard; peptide; 10 AA.

AC AAY52434;

DT 15-FEB-2000 (first entry)

DE Human tumour antigen NY-ESO-1 peptide #7.

XX Cancer; tumour; antigen; MHC; major histocompatibility complex; Class I;  
 KW T-cell; cytotoxic; stimulation; proliferation; treatment; diagnosis;  
 KW prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;  
 KW hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.

OS Synthetic.

XX Homo sapiens.

XX WO953938-A1.

PD 28-OCT-1999.

PF 24-MAR-1999; 99WO-US006875.

PR 17-APR-1998; 98US-00062422.

PR 02-OCT-1998; 98US-00165546.

PA (LUDW-) LUDWIG INST CANCER RES.

XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;

PI Gure A, Rittter G;

DR WPI: 2000-038483/03.

XX Novel peptides which bind to MHC class I and MHC class II molecules,  
 PT useful for therapeutic and diagnostic purposes.

XX Claim 55; Page 20; 49pp; English.

XX Peptides #4-#7 (AAY52431-Y52434) are peptides derived from the human  
 CC tumour antigen, NY-ESO-1 (AAY52430) which contain the motif LLMWIT  
 CC (AAY52441). These sequences can bind to MHC (major histocompatibility  
 CC Class I HLA-A2 molecules, thereby stimulating proliferation of cytotoxic  
 CC T-cells. CDNA encoding NY-ESO-1 was initially isolated from an oesophagus  
 CC squamous cell cancer cDNA library. Tissue localisation studies revealed  
 CC it to be expressed at high levels in normal ovary and testis but not in  
 CC normal colon, kidney, liver, brain, oesophagus and skin. It was expressed  
 CC in certain tumours and tumour cell lines with some degree of frequency -  
 CC these included melanoma specimens and cell lines, and breast and bladder  
 CC cancer specimens, with expression in other tumour types being sporadic.  
 CC These NY-ESO-1-derived peptides may be used in methods and compositions  
 CC used for the treatment, diagnosis and prevention of cancers (such as  
 CC melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian  
 CC cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the  
 CC proliferation of T cells

XX Sequence 10 AA;

Alignment Scores:

Pred. No.: 153 Length: 10  
 Score: 10.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY52434 (1-10)

QY 525 CTGTTGATGTGATACGACGAGCTTCTG 554  
 DB 1 LeuLeuMetTPIleThnGInCysPheLeu 10

RESULT 184

AAV70856  
 ID AAY70856 standard; peptide; 10 AA.

AC AAY70856;

DT 31-JUL-2000 (first entry)

DE CTL epitope-2 of human CAMEL protein.

XX CAMEL; CTL-recognised Antigen on Melanoma; cytotoxic T lymphocyte; CTL;  
 KW tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;  
 KW cancer; immunotherapy; immunogenic peptide; immune response.

OS Homo sapiens.

XX WO200023584-A1.

PD 27-APR-2000.

PF 15-OCT-1999; 99WO-EP007832.

PR 16-OCT-1998; 98EP-00119583.

PA (BOEH ) BOEHRINGER INGELHEIM INT GMBH.

PA (UTHO-) UNITIV HOSPITAL LEIDEN.

PI Schrier PI, Aarnoudse CA, Heider K, Klade C;

DR WPI: 2000-339685/29.

XX Tumor-associated antigen useful for cancer immunotherapy is encoded by  
 PT the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.

XX Claim 5; Page 34; 73pp; English.

XX The present sequence is an immunogenic peptide of human tumour-associated  
 CC antigen CAMEL (Cytotoxic T lymphocytes (CTL)-recognised Antigen on  
 CC Melanoma). This peptide is a CTL epitope, that has the ability to elicit  
 CC a CTL response. It corresponds to residues 2-11 of the CAMEL protein.  
 CC CAMEL protein is encoded by the LAGE-1 gene, a tumour-specific antigen.  
 CC It is different from the LAGE-1 protein, since it is translated from a  
 CC different open reading frame (ORF-1). It shows strong homology with NY-  
 CC ESO-1, a melanoma specific tumour antigen. The tumour-associated antigen  
 CC displayed on melanoma cells is recognised by cytotoxic T lymphocytes.  
 CC CAMEL is expressed in tumour cell lines, tumour tissues (e.g. breast and  
 CC lung) and in restricted number of healthy tissues. This sequence has  
 CC anticancer activity. CAMEL tumour antigen and immunogenic peptides  
 CC derived from it are useful for cancer immunotherapy. They have the  
 CC potential to induce an immune response, by eliciting a CTL response. The  
 CC DNA molecule is used to construct recombinant or fusion proteins

XX Sequence 10 AA;

Alignment Scores:

Pred. No.: 153 Length: 10  
 Score: 10.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY70856 (1-10)





RESULT 187  
 ID AAY79762 standard; peptide; 10 AA.  
 AC AAY79762;  
 AD AAY79762;  
 AE 10-MAY-2000 (first entry)  
 AF NY-ESO-1 derived peptide #18.  
 AG Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
 AH HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
 AI melanoma; synovial sarcoma.  
 AJ Homo sapiens.  
 AK WO200000824-A1.  
 AL 06-JAN-2000.  
 AM 25-JUN-1999; 99WO-US014493.  
 AN 26-JUN-1998; 98US-00105839.  
 AO (LUDW-) LUDWIG INST CANCER RES.  
 AP Tureci O, Sahin U, Pfeundschn M, Rammensee G, Stevanovic S;  
 AQ Chen Y, Gure A, Old LJ;  
 AR WPI; 2000-170933/15.  
 AS Determining the possible presence of breast, endometrial, colorectal,  
 AT lung, bladder or head-neck cancer.  
 AU Example 13; Page 27; 40pp; English.  
 AV A method has been developed for determining the possible presence of a  
 AW cancer, which is not melanoma or synovial sarcoma. The method comprises  
 AX assaying a sample taken from the subject to determine the expression of  
 AY an SSX gene, and determining the expression as a determination of the  
 AZ possible presence of cancer. Expression of SSX1 gene indicates possible  
 BA presence of breast, endometrial, colorectal, lung, bladder or head-neck  
 BB cancer. These cancers are also detected by SSX2 and SSX4 gene expression  
 BC SSX2 gene expression additionally indicates possible presence of  
 BD lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
 BE SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
 BF SSX5 gene expression indicates the same cancers as SSX1, except breast  
 BG cancer. Determining expression of SSX gene can be used to monitor  
 BH progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
 BI derived peptide complex stimulates proliferation of cytolytic T cells.  
 BJ This is useful for treating cancer, especially melanoma. AAY78464 to  
 BK AAY78468 represent specifically claimed HLA binding peptides for use in  
 BL the method of the invention. AA288452 to AA288465 represent PCR primers  
 BM used in the isolation of SSX genes in the exemplification of the present  
 BN invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
 BO SSX peptides derived from SSX proteins or NY-ESO-1, which are used in the  
 BP exemplification of the present invention  
 BQ  
 BR Sequence 10 AA;  
 BS  
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Db I IletHrGlncYSpHeLeuPrOvAlPHeLeu 10

RESULT 188

AAy79759

ID AAY79759 standard; peptide; 10 AA.

XX AAY79759;

AC AAY79759;

XX 10-MAY-2000 (first entry)

DT 10-MAY-2000 (first entry)

XX NY-ESO-1 derived peptide #15.

DE NY-ESO-1 derived peptide #15.

XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;

KM HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;

KW melanoma; synovial sarcoma.

XX

XX Homo sapiens.

OS

XX WO200000824-A1.

PN

XX 06-JAN-2000.

PD

XX 25-JUN-1999; 99WO-US014493.

PF

XX 26-JUN-1998; 98US-00105839.

PR

XX (LUDW-) LUDWIG INST CANCER RES.

PA

XX Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;

PI Chen Y, Gure A, Old LJ;

PI

XX WPI; 2000-170933/15.

DR

XX

XX Determining the possible presence of breast, endometrial, colorectal,

PT lung, bladder or head-neck cancer.

PT

XX

PS Example 13; Page 26; 40pp; English.

XX

XX A method has been developed for determining the possible presence of a

CC cancer, which is not melanoma or synovial sarcoma. The method comprises

CC assaying a sample taken from the subject to determine the expression of

CC an SSX gene, and determining the expression as a determination of the

CC possible presence of cancer. Expression of SSX1 gene indicates possible

CC presence of breast, endometrial, colorectal, lung, bladder or head-neck

CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression

CC SSX2 gene expression additionally indicates possible presence of

CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of

CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.

CC SSX5 gene expression indicates the same cancers as SSX1, except breast

CC cancer. Determining expression of SSX gene can be used to monitor

CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-

CC derived peptide complex stimulates proliferation of cytolytic T cells.

CC This is useful for treating cancer, especially melanoma. AAY78464 to

CC AAY78468 represent specifically claimed HLA binding peptides for use in

CC the method of the invention. AA288452 to AA288465 represent PCR primers

CC used in the isolation of SSX genes in the exemplification of the present

CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent

CC peptides derived from SSX proteins or NY-ESO-1, which are used in the

CC exemplification of the present invention

XX

XX

SO Sequence 10 AA;

XX

XX

Alignment Scores:

Pred. No.: 153 Length: 10

Score: 10.00 Matches: 10

Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.56% Indels: 0

Gaps: 0

US 10-023-182-1 (1-752) x AAY79759 (1-10)

yy 168 GCCACGCGGCGCAGAGTCCCGCGGCGCGCA 197



ID AAB69929 standard; peptide; 10 AA.  
XX  
XX AAB69929;  
XX  
XX 27-APR-2001 (first entry)  
XX  
XX Human NY-ESO-1 HLA binding motif #29.  
DE  
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
XX Homo sapiens.  
OS  
XX WO200107917-A1.  
XX  
XX 01-FEB-2001.  
XX  
XX 14-JUL-2000; 2000WO-US019220.  
XX  
XX 23-JUL-1999; 99US-00359503.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
XX WPI; 2001-182822/18.  
XX  
XX Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
XX  
XX SQ Sequence 10 AA;  
XX  
XX Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
XX  
XX US-10-023-182-1 (1-752) x AAB69929 (1-10)  
XX  
XX QY 390 GCCCAGCGCTTCCGTCGCGAGGGGTGCTT 419  
XX  
XX Db 1 AAlaProLeuProValProGlyValIleu 10  
XX  
XX RESULT 192  
XX AAB69933  
XX AAB69933 standard; peptide; 10 AA.  
XX  
XX AC AAB69933;  
XX  
XX DT 27-APR-2001 (first entry)  
XX

DE Human NY-ESO-1 HLA binding motif #33.  
XX  
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
XX Homo sapiens.  
OS  
XX WO200107917-A1.  
XX  
XX 01-FEB-2001.  
XX  
XX 14-JUL-2000; 2000WO-US019220.  
XX  
XX 23-JUL-1999; 99US-00359503.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
XX WPI; 2001-182822/18.  
XX  
XX Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
XX  
XX SQ Sequence 10 AA;  
XX  
XX Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
XX  
XX US-10-023-182-1 (1-752) x AAB69933 (1-10)  
XX  
XX QY 183 GGTCCCGGCGGCGAGGCGGCGAGGAGGCC 212  
XX  
XX Db 1 GIlpProArGglYAlaGIlYAlaAlaArgAla 10  
XX  
XX RESULT 193  
XX AAB69936  
XX AAB69936 standard; peptide; 10 AA.  
XX  
XX AC AAB69936;  
XX  
XX DT 27-APR-2001 (first entry)  
XX  
XX DE Human NY-ESO-1 HLA binding motif #36.  
XX  
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX

```
OS Homo sapiens.
XX
XX WO200107917-A1.
XX
XX 01-FEB-2001.
XX
XX 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX (SLOK ) SLOAN KETTERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
XX WPI; 2001-182822/18.
XX
XX Method useful for determining the status (e.g. progression, regression or
XX stability of the disease) of a cancerous condition, involves determining
XX the levels of NY-ESO-1 specific antibodies in a sample taken from a
XX patient.
XX
XX Example 14; Page 25; 50pp; English.
XX
XX The present sequence is given in a specification relating to a method for
XX determining the status of a cancerous condition in a patient with a
XX tumour that expresses NY-ESO-1. The method comprises assaying a sample
XX taken from the patient for antibodies that specifically bind to the NY-
XX ESO-1 and comparing the value obtained to a prior value obtained from
XX assay of a prior sample taken from the patient. Any difference between
XX the values is indicative of a change in status of the cancerous
XX condition. The method is useful for determining whether a cancerous
XX condition is progressing, regressing or remaining stable, in particular
XX in patients receiving treatment for a melanoma, adenocarcinoma, non-small
XX cell lung carcinoma or bladder carcinoma
XX
XX Sequence 10 AA;
XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAB69936 (1-10)
XX
XX 0Y 513 CAGCAGCTTCCGTGTGATGTCACG 542
XX DB 1 GInGInLeuSerLeuLeuMetTrpIleThr 10
XX
XX RESULT 194
XX ID AAB69935 standard; peptide: 10 AA.
XX
XX AAB69935;
XX
XX 27-APR-2001 (first entry)
XX
XX Human NY-ESO-1 HLA binding motif #35.
XX
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
XX HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
XX non-small cell lung carcinoma; tumour status determination.
XX
XX Homo sapiens.
XX
XX WO200107917-A1.
XX
XX 23-JUL-2000; 2000WO-US019220.
XX
XX 01-FEB-2001.
XX
XX
```

```
PF 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX (SLOK ) SLOAN KETTERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
XX WPI; 2001-182822/18.
XX
XX Method useful for determining the status (e.g. progression, regression or
XX stability of the disease) of a cancerous condition, involves determining
XX the levels of NY-ESO-1 specific antibodies in a sample taken from a
XX patient.
XX
XX Example 14; Page 25; 50pp; English.
XX
XX The present sequence is given in a specification relating to a method for
XX determining the status of a cancerous condition in a patient with a
XX tumour that expresses NY-ESO-1. The method comprises assaying a sample
XX taken from the patient for antibodies that specifically bind to the NY-
XX ESO-1 and comparing the value obtained to a prior value obtained from
XX assay of a prior sample taken from the patient. Any difference between
XX the values is indicative of a change in status of the cancerous
XX condition. The method is useful for determining whether a cancerous
XX condition is progressing, regressing or remaining stable, in particular
XX in patients receiving treatment for a melanoma, adenocarcinoma, non-small
XX cell lung carcinoma or bladder carcinoma
XX
XX Sequence 10 AA;
XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAB69935 (1-10)
XX
XX 0Y 390 GCCCAGCGCTTCCGTCGACGAGGGCTT 419
XX DB 1 A1aPrProLeuProValProGlyValLeu 10
XX
XX RESULT 195
XX ID AAB69932 standard; peptide: 10 AA.
XX
XX AAB69932;
XX
XX 27-APR-2001 (first entry)
XX
XX Human NY-ESO-1 HLA binding motif #32.
XX
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
XX HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
XX non-small cell lung carcinoma; tumour status determination.
XX
XX Homo sapiens.
XX
XX WO200107917-A1.
XX
XX 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX (SLOK ) SLOAN KETTERING INST CANCER RES.
XX
```

PA (CORR ) CORNELL RES FOUND INC.  
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX WPI, 2001-182822/18.  
XX  
XX Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
CC  
SQ Sequence 10 AA;  
XX  
XX  
XX Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAB69932 (1-10)  
QY 231 GCCCGCGGGGTCCGATGCGCGCGGCT 260  
DB 1 AAlProARgGlyProHisGlyGlyAlaAla 10  
RESULT 196  
AAB69937  
ID AAB69937 standard; peptide; 10 AA.  
XX  
XX AAB69937;  
XX  
XX 27-APR-2001 (first entry)  
XX  
XX Human NY-ESO-1 HLA binding motif #37.  
XX  
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
XX Homo sapiens.  
XX  
XX WO200107917-A1.  
XX  
XX 01-FEB-2001.  
XX  
XX 14-JUL-2000; 2000WO-US019220.  
XX  
XX 23-JUL-1999; 99US-00359503.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK ) SLOAN KETTERING INST CANCER RES.  
PA (CORR ) CORNELL RES FOUND INC.  
XX  
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX WPI, 2001-182822/18.  
XX

PT Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
CC  
SQ Sequence 10 AA;  
XX  
XX  
XX Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAB69937 (1-10)  
QY 510 CTCGACGAGCTTTCCTGTGATGTGATG 539  
DB 1 LeuGInGInLeuSerLeuLeuMetTriple 10  
RESULT 197  
AAB69925  
ID AAB69925 standard; peptide; 10 AA.  
XX  
XX AAB69925;  
XX  
XX 27-APR-2001 (first entry)  
XX  
XX Human NY-ESO-1 HLA binding motif #25.  
XX  
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
XX Homo sapiens.  
XX  
XX WO200107917-A1.  
XX  
XX 01-FEB-2001.  
XX  
XX 14-JUL-2000; 2000WO-US019220.  
XX  
XX 23-JUL-1999; 99US-00359503.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK ) SLOAN KETTERING INST CANCER RES.  
PA (CORR ) CORNELL RES FOUND INC.  
XX  
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX WPI, 2001-182822/18.  
XX  
XX Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX

XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
XX

SO Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAB69925 (1-10)

Qy 312 CTGCTTGAGTCTACCTGCGCATGCTTTC 341  
DB 1 LeuLeuGIuPheTYrLeuAlaMeCPhe 10

RESULT 198  
AAB69926  
ID AAB69926 standard; peptide; 10 AA.  
AC AAB69926;  
XX  
DT 27-APR-2001 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #26.  
XX  
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
OS Homo sapiens.  
XX  
PN WO200107917-A1.  
XX  
PD 01-FEB-2001.  
XX  
PF 14-JUL-2000; 2000WO-US019220.  
XX  
PR 23-JUL-1999; 99US-00359503.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK ) SLOAN KETTERING INST CANCER RES.  
PA (CORR ) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
XX WPI; 2001-182822/18.  
XX  
XX Method useful for determining the status (e.g. progression, regression or  
XX stability of the disease) of a cancerous condition, involves determining  
XX the levels of NY-ESO-1 specific antibodies in a sample taken from a  
XX patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
XX determining the status of a cancerous condition in a patient with a  
XX tumour that expresses NY-ESO-1. The method comprises assaying a sample  
XX taken from the patient for antibodies that specifically bind to the NY-  
XX ESO-1 and comparing the value obtained to a prior value obtained from  
XX assay of a prior sample taken from the patient. Any difference between  
XX the values is indicative of a change in status of the cancerous  
XX condition. The method is useful for determining whether a cancerous  
XX condition is progressing, regressing or remaining stable, in particular  
XX in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
XX cell lung carcinoma or bladder carcinoma

CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
XX

SO Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAB69926 (1-10)

Qy 297 GGGCGGAGAGCGCGCTTGAGTTCTAC 326  
DB 1 GlyProGIuSerzrGleuLeuGIuPheTYr 10

RESULT 199  
AAB69934  
ID AAB69934 standard; peptide; 10 AA.  
XX  
AC AAB69934;  
XX  
DT 27-APR-2001 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #34.  
XX  
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
OS Homo sapiens.  
XX  
PN WO200107917-A1.  
XX  
PD 01-FEB-2001.  
XX  
PF 14-JUL-2000; 2000WO-US019220.  
XX  
PR 23-JUL-1999; 99US-00359503.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK ) SLOAN KETTERING INST CANCER RES.  
PA (CORR ) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
XX WPI; 2001-182822/18.  
XX  
XX Method useful for determining the status (e.g. progression, regression or  
XX stability of the disease) of a cancerous condition, involves determining  
XX the levels of NY-ESO-1 specific antibodies in a sample taken from a  
XX patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
XX determining the status of a cancerous condition in a patient with a  
XX tumour that expresses NY-ESO-1. The method comprises assaying a sample  
XX taken from the patient for antibodies that specifically bind to the NY-  
XX ESO-1 and comparing the value obtained to a prior value obtained from  
XX assay of a prior sample taken from the patient. Any difference between  
XX the values is indicative of a change in status of the cancerous  
XX condition. The method is useful for determining whether a cancerous  
XX condition is progressing, regressing or remaining stable, in particular  
XX in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
XX cell lung carcinoma or bladder carcinoma

```
XX SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69934 (1-10)

OY 465 ACTGCTGCAGACCCAGCCCACTGCAGCTC 494
DB 1 ThrAlaAlaSPHlaArgGlnLeuGlnLeu 10

RESULT 200
AAB69928
ID AAB69928 standard; peptide; 10 AA.
XX
AC AAB69928;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #28.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDWIG INST CANCER RES.
PA (SLOAN KETTERING INST CANCER RES.
PA (CORR ) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
```

```
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69928 (1-10)

OY 372 AGAGCCTGCGCCAGATGCCCACTGCTT 401
DB 1 ArgSerLeuAlaGlnAspAlaProPheLeu 10

RESULT 201
AAB69930
ID AAB69930 standard; peptide; 10 AA.
XX
AC AAB69930;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #30.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDWIG INST CANCER RES.
PA (SLOAN KETTERING INST CANCER RES.
PA (CORR ) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69930 (1-10)
```



```
QY      288 GGGGCCAGGGGGCCGAGAGCCGCTGCTT 317
XX:      |||||
KW      1 GlyAlaArgGlyProGluSerArgLeuLeu 10
DB

RESULT 202
AAG67195
ID      AAG67195 standard; peptide; 10 AA.
XX
AC      AAG67195;
XX
XX      13-NOV-2001 (first entry)
DE      Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
XX      Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW      HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW      cancer; testis tumour.
XX
XX      Homo sapiens.
OS
XX      WO200162917-A1.
XX
XX      30-AUG-2001.
XX
XX      22-JAN-2001; 2001WO-US002126.
XX
XX      22-FEB-2000; 2000US-00510635.
XX
XX      (LUDW-) LUDWIG INST CANCER RES.
XX
XX      Leche B, Boon-Falleur T;
XX
XX      WPI; 2001-550091/61.
XX
XX      Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
XX      for diagnosing testicular tumors.
XX
XX      Example 13; Page 26; 50pp; English.
XX
XX      AAG67169-AAG67206 represent peptides which are derived from cancer testis
XX      tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
XX      leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
XX      least one human leukocyte antigen (HLA) binding peptide, which binds to
XX      Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
XX      expressed in tumor mRNA and in testis, but not normal colon, kidney,
XX      liver or brain tissue. The presence or level of expression of NY-ESO-1
XX      may be assayed for the diagnosis of cancer, especially testis tumors
XX
XX      Sequence 10 AA;
SQ
Alignment Scores:
Pred. No.:      153      Length:      10
Score:          10.00     Matches:      10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match:    5.56%     Indels:      0
DB:             1        Gaps:          0
US-10-023-182-1 (1-752) x AAG67195 (1-10)
QY      396 CCGCTTCCCGTCCGAGGGGTGCTTGAAG 425
XX:      |||||
KW      1 ProLeuProValProGlyValLeuLeuLys 10
DB

RESULT 203
AAG67203
ID      AAG67203 standard; peptide; 10 AA.
XX
AC      AAG67203;
XX
XX      13-NOV-2001 (first entry)
XX
```

```
DE      Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX:      |||||
KW      1 Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW      HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW      cancer; testis tumour.
XX
XX      Homo sapiens.
OS
XX      WO200162917-A1.
XX
XX      30-AUG-2001.
XX
XX      22-JAN-2001; 2001WO-US002126.
XX
XX      22-FEB-2000; 2000US-00510635.
XX
XX      (LUDW-) LUDWIG INST CANCER RES.
XX
XX      Leche B, Boon-Falleur T;
XX
XX      WPI; 2001-550091/61.
XX
XX      Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
XX      for diagnosing testicular tumors.
XX
XX      Example 13; Page 26; 50pp; English.
XX
XX      AAG67169-AAG67206 represent peptides which are derived from cancer testis
XX      tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
XX      leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
XX      least one human leukocyte antigen (HLA) binding peptide, which binds to
XX      Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
XX      expressed in tumor mRNA and in testis, but not normal colon, kidney,
XX      liver or brain tissue. The presence or level of expression of NY-ESO-1
XX      may be assayed for the diagnosis of cancer, especially testis tumors
XX
XX      Sequence 10 AA;
SQ
Alignment Scores:
Pred. No.:      153      Length:      10
Score:          10.00     Matches:      10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match:    5.56%     Indels:      0
DB:             1        Gaps:          0
US-10-023-182-1 (1-752) x AAG67203 (1-10)
QY      390 GCCCCACCGCTTCCCGTCCGAGGGGTGCTT 419
XX:      |||||
KW      1 AlaProLeuProValProGlyValLeu 10
DB

RESULT 204
AAG67204
ID      AAG67204 standard; peptide; 10 AA.
XX
AC      AAG67204;
XX
XX      13-NOV-2001 (first entry)
XX
XX      Cancer testis tumour antigen NY-ESO-1 derived peptide.
DE
XX      Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW      HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW      cancer; testis tumour.
XX
XX      Homo sapiens.
OS
XX      WO200162917-A1.
XX
XX      30-AUG-2001.
XX
XX      22-JAN-2001; 2001WO-US002126.
XX
```

```
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Lethe B, Boon-Falleur T;
PI
XX WPI; 2001-550091/61.
DR
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
CC
XX
SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAG67204 (1-10)
QY 513 CAGCAGCTTCCCTGTGATGCGATCAGC 542
Db 1 GlnGlnLeuSerLeuLeuMetTrpIleThr 10
RESULT 205
AAG67196
ID AAG67196 standard; peptide; 10 AA.
XX
AC AAG67196;
XX
XX 13-NOV-2001 (first entry)
DT
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.
DE
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
XX Homo sapiens.
OS
XX
XX WO200162917-A1.
PN
XX
XX 30-AUG-2001.
PD
XX
XX 22-JAN-2001; 2001WO-US002126.
PF
XX
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Lethe B, Boon-Falleur T;
PI
XX WPI; 2001-550091/61.
DR
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
```

```
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
CC
XX
SQ Sequence 10 AA;
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAG67196 (1-10)
QY 372 AGGAGCCTGGCCGAGATGCCCGCGCTT 401
Db 1 ArgSerLeuAlaGlnAspAlaProIleu 10
RESULT 206
AAG67205
ID AAG67205 standard; peptide; 10 AA.
XX
AC AAG67205;
XX
XX 13-NOV-2001 (first entry)
DT
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.
DE
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAEB-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
XX Homo sapiens.
OS
XX
XX WO200162917-A1.
PN
XX
XX 30-AUG-2001.
PD
XX
XX 22-JAN-2001; 2001WO-US002126.
PF
XX
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Lethe B, Boon-Falleur T;
PI
XX WPI; 2001-550091/61.
DR
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
CC
XX
SQ Sequence 10 AA;
Alignment Scores:
```

Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67205 (1-10)

OY 510 CTCGACGACGCTTTCCCTGTGATGATC 539

Db 1 LeuGInGInLeuSerLeuLeuMetRipile 10

RESULT 207

AA67201 standard; peptide; 10 AA.

AC AAG67201;

DT 13-NOV-2001 (first entry)

XX Cancer testis tumour antigen NY-ESO-1 derived peptide.

XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;

KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;

KW cancer; testis tumour.

OS Homo sapiens.

XX WO200162917-A1.

XX 30-AUG-2001.

XX 22-JAN-2001; 2001WO-US002126.

XX 22-FEB-2000; 2000US-00510635.

XX (LUDW-) LUDWIG INST CANCER RES.

XX PI Letche B, Boon-Falleur T;

XX WPI; 2001-550091/61.

XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful

XX for diagnosing testicular tumors.

XX Example 13; Page 26; 50pp; English.

XX AAG67169-AAG67206 represent peptides which are derived from cancer testis

CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human

CC leukocyte antigens (HLA). NY-ESO-1 is a molecule that is processed to at

CC least one human leukocyte antigen (HLA) binding peptide, which binds to

CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is

CC expressed in tumour mRNA and in testis, but not normal colon, kidney,

CC liver or brain tissue. The presence or level of expression of NY-ESO-1

CC may be assayed for the diagnosis of cancer, especially testis tumours

XX Sequence 10 AA;

XX Alignment Scores:

Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67201 (1-10)

OY 183 GGTCCCGGCGGCGGCGGCGGCGGCGG 212

Db 1 GlyProArgGlyAlaGlyAlaArgAla 10

RESULT 208  
AA67197 standard; peptide; 10 AA.

XX AAG67197;

AC AAG67197;

DT 13-NOV-2001 (first entry)

XX Cancer testis tumour antigen NY-ESO-1 derived peptide.

XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;

KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;

KW cancer; testis tumour.

OS Homo sapiens.

XX WO200162917-A1.

XX 30-AUG-2001.

XX 22-JAN-2001; 2001WO-US002126.

XX 22-FEB-2000; 2000US-00510635.

XX (LUDW-) LUDWIG INST CANCER RES.

XX PI Letche B, Boon-Falleur T;

XX WPI; 2001-550091/61.

XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful

XX for diagnosing testicular tumors.

XX Example 13; Page 26; 50pp; English.

XX AAG67169-AAG67206 represent peptides which are derived from cancer testis

CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human

CC leukocyte antigens (HLA). NY-ESO-1 is a molecule that is processed to at

CC least one human leukocyte antigen (HLA) binding peptide, which binds to

CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is

CC expressed in tumour mRNA and in testis, but not normal colon, kidney,

CC liver or brain tissue. The presence or level of expression of NY-ESO-1

CC may be assayed for the diagnosis of cancer, especially testis tumours

XX Sequence 10 AA;

XX Alignment Scores:

Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67197 (1-10)

OY 390 GCCCGACGCTTCCGTCGCGGCGGCGGCTT 419

Db 1 AlaProLeuProValProGlyValLeu 10

RESULT 209

AA67200 standard; peptide; 10 AA.

AC AAG67200;

DT 13-NOV-2001 (first entry)

XX Cancer testis tumour antigen NY-ESO-1 derived peptide.

XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;

KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;

KW cancer; testis tumour.

```
XX Homo sapiens.
OS
XX WO200162917-A1.
PN
XX 30-AUG-2001.
PD
XX 22-JAN-2001; 2001WO-US002126.
PF
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX Lethe B, Boon-Falleur T;
PI
XX MPI; 2001-550091/61.
DR
XX
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGF-2) useful
PT for diagnosing testicular tumors.
XX
XX Example 13; Page 26; 50pp; English.
PS
XX
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
CC
XX
XX Sequence 10 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAG67200 (1-10)
OY 231 GCCCGCGGCGTCCGATGCGCGCGGCT 260
Db 1 A1AProArgGlyProHisGlyGlyAlaAla 10
RESULT 210
AAG67194
ID AAG67194 standard; peptide: 10 AA.
XX
XX AAG67194;
AC
XX 13-NOV-2001 (first entry)
DT
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.
DE
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
XX Homo sapiens.
OS
XX WO200162917-A1.
PN
XX 30-AUG-2001.
PD
XX 22-JAN-2001; 2001WO-US002126.
PF
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX
```

```
PI Lethe B, Boon-Falleur T;
XX
XX MPI; 2001-550091/61.
DR
XX
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGF-2) useful
PT for diagnosing testicular tumors.
XX
XX Example 13; Page 26; 50pp; English.
PS
XX
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
CC
XX
XX Sequence 10 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAG67194 (1-10)
OY 297 GGGCCGGAGAGCCGCTGCTTGAAGTTCTAC 326
Db 1 GlyProGlnSerArgLeuGlnIlePheTyr 10
RESULT 211
AAG67202
ID AAG67202 standard; peptide: 10 AA.
XX
XX AAG67202;
AC
XX 13-NOV-2001 (first entry)
DT
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.
DE
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX
XX Homo sapiens.
OS
XX WO200162917-A1.
PN
XX 30-AUG-2001.
PD
XX 22-JAN-2001; 2001WO-US002126.
PF
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX Lethe B, Boon-Falleur T;
PI
XX MPI; 2001-550091/61.
DR
XX
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGF-2) useful
PT for diagnosing testicular tumors.
XX
XX Example 13; Page 26; 50pp; English.
PS
XX
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
```

CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
CC may be assayed for the diagnosis of cancer, especially testis tumours  
XX

Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAG67202 (1-10)

Qy 465 ACTGCTGCAGACCAACCCCACTGCAGCTC 494  
DB 1 ThrAlaAlaAspHisArgGlnLeuGlnLeu 10

RESULT 212

AAG67193  
ID AAG67193 standard; peptide; 10 AA.

AC AAG67193;

XX 13-NOV-2001 (first entry)

XX Cancer testis tumour antigen NY-ESO-1 derived peptide.

XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;

KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;

KM cancer; testis tumour.

XX Homo sapiens.

XX OS

XX PN WO200162917-A1.

XX PD 30-AUG-2001.

XX 22-JAN-2001; 2001WO-US002126.

XX 22-FEB-2000; 2000US-00510635.

XX (LUDM-) LUDWIG INST CANCER RES.

XX Leche B, Boon-Falleur T;

XX WPI; 2001-550091/61.

XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
XX for diagnosing testicular tumors.

XX Example 13; Page 26; 50pp; English.

CC AAG67169-AAG67206 represent peptides which are derived from cancer testis  
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at  
CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
CC may be assayed for the diagnosis of cancer, especially testis tumours  
XX

Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67193 (1-10)

Qy 312 CTGCTTGAGTTTCTACTGCGCATGCTTTTC 341  
DB 1 LeuLeuGlnPheTyrrLeuAlaMetProPhe 10

RESULT 213

AAG67198  
ID AAG67198 standard; peptide; 10 AA.

AC AAG67198;

XX 13-NOV-2001 (first entry)

XX Cancer testis tumour antigen NY-ESO-1 derived peptide.

XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;

KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;

KM cancer; testis tumour.

XX Homo sapiens.

XX OS

XX PN WO200162917-A1.

XX PD 30-AUG-2001.

XX 22-JAN-2001; 2001WO-US002126.

XX 22-FEB-2000; 2000US-00510635.

XX (LUDM-) LUDWIG INST CANCER RES.

XX Leche B, Boon-Falleur T;

XX WPI; 2001-550091/61.

XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
XX for diagnosing testicular tumors.

XX Example 13; Page 26; 50pp; English.

CC AAG67169-AAG67206 represent peptides which are derived from cancer testis  
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at  
CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
CC may be assayed for the diagnosis of cancer, especially testis tumours  
XX

Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAG67198 (1-10)

Qy 288 GGGGCGAGGGGCGGAGAGCCGCTGCTT 317  
DB 1 GlyAlaArgGlyProGlnSerArgLeuLeu 10

RESULT 214

AAG97545  
ID AAG97545 standard; peptide; 10 AA.

AC AAG97545;

```
XX 18-SEP-2001 (first entry)
DT Human complementary peptide, SEQ ID NO: 3740.
XX
DE Human complementary peptide; ligand; drug discovery; drug design.
XX
KM Human; complementary peptide; ligand; drug discovery; drug design.
XX
OS Homo sapiens.
XX
PN WO200142277-A2.
XX
PD 14-JUN-2001.
XX
PF 13-DEC-2000; 2000WO-GB004776.
XX
PR 13-DEC-1999; 99GB-00029464.
XX
PA (PROT-) PROTEOM LTD.
XX
PI Roberts GW, Heal JR;
XX
DR WPI; 2001-408419/43.
XX
PT A set of peptide ligands consisting of specific complementary peptides to
PT proteins encoded by genes of the human genome, useful in an assay for
PT screening and identifying of one or more novel peptides which are drug
PT candidates or pro-drugs.
XX
PS Example 6; Page 580; 646pp; English.
XX
CC The invention relates to a set of complementary peptide ligands generated
CC from the human genome. The complementary peptides interact with their
CC relevant target proteins encoded in the human genome. They can be used as
CC reagents in drug discovery and as lead ligands to facilitate drug design
CC and development. The present sequence is a complementary peptide provided
CC in the specification
XX
SQ Sequence 10 AA;

Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG97545 (1-10)
QY 183 GGTCCCGGGGCGCAGGGGCGCAAGGGCC 212
DB 1 GYProArgGlyAlaGlyAlaAlaArgAla 10

RESULT 215
AAG93818
ID AAG93818 standard; peptide; 10 AA.
XX
AC AAG93818;
XX
DT 18-SEP-2001 (first entry)
XX
DE Human complementary peptide, SEQ ID NO: 12.
XX
KM Human; complementary peptide; ligand; drug discovery; drug design.
XX
OS Homo sapiens.
XX
PN WO200142277-A2.
XX
PD 14-JUN-2001.
XX
PF 13-DEC-2000; 2000WO-GB004776.
XX
```

```
PR 13-DEC-1999; 99GB-00029464.
XX
XX (PROT-) PROTEOM LTD.
XX
PI Roberts GW, Heal JR;
XX
DR WPI; 2001-408419/43.
XX
PT A set of peptide ligands consisting of specific complementary peptides to
PT proteins encoded by genes of the human genome, useful in an assay for
PT screening and identifying of one or more novel peptides which are drug
PT candidates or pro-drugs.
XX
PS Example 4; Page 42; 646pp; English.
XX
CC The invention relates to a set of complementary peptide ligands generated
CC from the human genome. The complementary peptides interact with their
CC relevant target proteins encoded in the human genome. They can be used as
CC reagents in drug discovery and as lead ligands to facilitate drug design
CC and development. The present sequence is a complementary peptide provided
CC in the specification
XX
SQ Sequence 10 AA;

Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG93818 (1-10)
QY 225 GGAGGCGCCCGCGGCGGTCGCGATGCGGCGC 254
DB 1 GYgYlaProArgGlyProHisGlyGly 10

RESULT 216
AAG97546
ID AAG97546 standard; peptide; 10 AA.
XX
AC AAG97546;
XX
DT 18-SEP-2001 (first entry)
XX
DE Human complementary peptide, SEQ ID NO: 3741.
XX
KM Human; complementary peptide; ligand; drug discovery; drug design.
XX
OS Homo sapiens.
XX
PN WO200142277-A2.
XX
PD 14-JUN-2001.
XX
PF 13-DEC-2000; 2000WO-GB004776.
XX
PR 13-DEC-1999; 99GB-00029464.
XX
PA (PROT-) PROTEOM LTD.
XX
PI Roberts GW, Heal JR;
XX
DR WPI; 2001-408419/43.
XX
PT A set of peptide ligands consisting of specific complementary peptides to
PT proteins encoded by genes of the human genome, useful in an assay for
PT screening and identifying of one or more novel peptides which are drug
PT candidates or pro-drugs.
XX
PS Example 6; Page 580; 646pp; English.
XX
```

CC The invention relates to a set of complementary peptide ligands generated  
CC from the human genome. The complementary peptides interact with their  
CC relevant target proteins encoded in the human genome. They can be used as  
CC reagents in drug discovery and as lead ligands to facilitate drug design  
CC and development. The present sequence is a complementary peptide provided  
CC in the specification

XX Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAG97546 (1-10)

OY 183 GGTCCCGGGGCGAGGGGCGAAGGGCC 212

Db 1 GTPQHTG1yAlaGlyAlaAlaArgAla 10

RESULT 217

AAB31331  
ID AAB31331 standard; peptide; 10 AA.

XX AAB31331;

XX 20-APR-2001 (first entry)

XX Exemplary antigen characteristic of tumours and derived from NY-ESO-1.

XX MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;

KW MAGE-A1 HLA class II-binding protein; vaccine.

XX Homo sapiens.

XX WO200078806-A1.

XX 28-DEC-2000.

XX 14-JUN-2000; 2000WO-US016287.

XX 18-JUN-1999; 99US-00336091.

XX (LUDW-) LUDWIG INST CANCER RES.

XX Van Snick J, Lethe B, Chau P, Boon-Falleur T, Van Der Bruggen P;

XX WPI; 2001-102698/11.

XX Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and  
XX are presented to the class II molecules, useful for inducing immune  
XX response and treating cancers characterized by expression of MAGE-A1.

XX Disclosure: Page 32; 78pp; English.

XX AAB31302-59 represent exemplary antigens which are characteristic of  
XX tumours. They can be used to enhance the immune response of vaccines  
XX comprising peptides derived from human MAGE-A1 HLA (human leukocyte  
XX antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA  
XX binding protein stimulate the activity and proliferation of CD4+ T  
XX lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic  
XX agent for diagnosing a disorder characterized by expression of MAGE-A1.  
XX The protein is used for treating a disorder characterized by expression  
XX of MAGE-A1 such as cancers e.g. melanoma, squamous cell carcinomas,  
XX colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides  
XX derived from the MAGE-A1 HLA binding protein are useful in the production  
XX of anti-tumour vaccines

XX Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAB31331 (1-10)

OY 210 GCTCGGGGCGGAGGCGCGCGCGG 239

Db 1 AAlserGlyProGlyGlyAlaProArg 10

RESULT 218

AAB31332  
ID AAB31332 standard; peptide; 10 AA.

XX AAB31332;

XX 20-APR-2001 (first entry)

XX Exemplary antigen characteristic of tumours and derived from NY-ESO-1.

XX MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;

KW MAGE-A1 HLA class II-binding protein; vaccine.

XX Homo sapiens.

XX WO200078806-A1.

XX 28-DEC-2000.

XX 14-JUN-2000; 2000WO-US016287.

XX 18-JUN-1999; 99US-00336091.

XX (LUDW-) LUDWIG INST CANCER RES.

XX Van Snick J, Lethe B, Chau P, Boon-Falleur T, Van Der Bruggen P;

XX WPI; 2001-102698/11.

XX Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and  
XX are presented to the class II molecules, useful for inducing immune  
XX response and treating cancers characterized by expression of MAGE-A1.

XX Disclosure: Page 32; 78pp; English.

XX AAB31302-59 represent exemplary antigens which are characteristic of  
XX tumours. They can be used to enhance the immune response of vaccines  
XX comprising peptides derived from human MAGE-A1 HLA (human leukocyte  
XX antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA  
XX binding protein stimulate the activity and proliferation of CD4+ T  
XX lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic  
XX agent for diagnosing a disorder characterized by expression of MAGE-A1.  
XX The protein is used for treating a disorder characterized by expression  
XX of MAGE-A1 such as cancers e.g. melanoma, squamous cell carcinomas,  
XX colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides  
XX derived from the MAGE-A1 HLA binding protein are useful in the production  
XX of anti-tumour vaccines

XX Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x AAB31332 (1-10)





```
Oy      210 GCTCGGGGCGGAGAGCGCCCGCGG 239
Db      1 AIsaerGIyProGIyGIyAlaIProArg 10

RESULT 221
AAE07785
ID AAE07785 standard; peptide; 10 AA.
XX
AC AAE07785;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 peptide #19 to characterise epitope recognised by TE4-1.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Example 6; Fig 6A; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC peptide used in the characterisation of the NY ESO-1 epitope recognised
CC by TE4-1
XX
SQ Sequence 10 AA;

Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07785 (1-10)
```

```
Oy      414 GTGCTTCTGAAGAGTTCACTGTTCCGGC 443
Db      1 ValIeNuLySGIuPheNrIvaISerGIy 10

RESULT 222
AAE07778
ID AAE07778 standard; peptide; 10 AA.
XX
AC AAE07778;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human NY ESO-1 epitope.
XX
KW Human; major histocompatibility complex; MHC; vaccine; metastasis;
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;
KW immunotherapy.
XX
OS Homo sapiens.
XX
PN WO200155393-A2.
XX
PD 02-AUG-2001.
XX
PF 26-JAN-2001; 2001WO-US002765.
XX
PR 28-JAN-2000; 2000US-0179004P.
PR 29-SEP-2000; 2000US-0237107P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang R, Rosenberg SA, Zeng G;
XX
DR WPI; 2001-496851/54.
XX
PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as
PT protection from metastasis.
XX
PS Claim 64; Page 81; 134pp; English.
XX
CC The invention relates to the identification and isolation of major
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP
CC restricted. The products of the gene are promising candidates for
CC immunotherapeutic strategies for the prevention, treatment and diagnosis
CC of patients with cancer. The cancer epitopes are useful as immunogen and
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
CC lymphocytes resulting in protection of the recipient from development of
CC cancer and protection from metastasis, or by inhibiting the growth of
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also
CC useful as diagnostic agent to detect the presence of cancer, to enhance
CC the generation of antibody and/or CD8+ T cell responses against any given
CC target antigen and/or hapten and to induce tumour-specific humoral-
CC mediated immunity against cancer. The present sequence is human NY ESO-1
CC epitope
XX
SQ Sequence 10 AA;

Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE07778 (1-10)
```

Qy 534 TGGATCAGCAGTCTTCTGCGCGTGT 563  
Db 1 TptlEtHnGlnCySpheLeuProValPhe 10

## RESULT 223

AAE07730  
ID AAE07730 standard; peptide; 10 AA.

AC AAE07730;

DT 06-NOV-2001 (first entry)

DE Human NY ESO-1 MHC class II restricted T cell epitope #16.

XX Human; major histocompatibility complex; MHC; vaccine; metastasis;  
KW class II restricted T cell epitope; MHC-II epitope; cancer antigen;  
KW NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;  
KW tumour-specific humoral-mediated immunity; cancer; cytostatic;  
KW immunotherapy.

OS Homo sapiens.

PN WO200155393-A2.

PD 02-AUG-2001.

PF 26-JAN-2001; 2001WO-US002765.

PR 28-JAN-2000; 2000US-0179004P.

PR 29-SEP-2000; 2000US-0237107P.

PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.

PI Wang R, Rosenberg SA, Zeng G;

PI WPI; 2001-496851/54.

PT New NY-ESO cancer peptide or MHC class II restricted T cell epitopes,  
PT useful as immunogen and vaccine for inhibiting cancer in a mammal or as  
PT protection from metastasis.

PS Claim 4; Page 74; 134pp; English.

XX The invention relates to the identification and isolation of major  
CC histocompatibility (MHC) class II restricted T cell epitope (MHC-II  
CC epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes  
CC from NY ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte  
CC antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP  
CC restricted. The products of the gene are promising candidates for  
CC immunotherapeutic strategies for the prevention, treatment and diagnosis  
CC of patients with cancer. The cancer epitopes are useful as immunogen and  
CC vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T  
CC lymphocytes resulting in protection of the recipient from development of  
CC cancer and protection from metastasis, or by inhibiting the growth of  
CC cells expressing the NY-ESO-1 gene product. The cancer peptides are also  
CC useful as diagnostic agent to detect the presence of cancer, to enhance  
CC the generation of antibody and/or CD8+ T cell responses against any given  
CC target antigen and/or hapten and to induce tumour-specific humoral-  
CC mediated immunity against cancer. The present sequence is MHC class II  
CC restricted T cell epitope of human NY ESO-1 protein

XX Sequence 10 AA;

SQ

Alignment Scores:

Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) \* AAE07730 (1-10)

Qy 414 GTGCTTGAGAGATTCACTGTGCGGC 443  
Db 1 ValLeuLeuYsGlnPheThrValSerCyl 10

## RESULT 224

ABG79072  
ID ABG79072 standard; peptide; 10 AA.

AC ABG79072;

DT 15-NOV-2002 (first entry)

DE Human CAMEL class I HLA widely expressed antigen peptide #1.

XX Cell penetrating peptide; cancer; tumour; melanoma; thymoma; antigen;  
KW lymphoma; sarcoma; lung cancer; non-Hodgkin's lymphoma; leukaemia;  
KW Hodgkin's lymphoma; uterine cancer; cervical cancer; bladder cancer;  
KW kidney cancer; adenocarcinoma; breast cancer; prostate cancer;  
KW ovarian cancer; pancreatic cancer; epitope; vaccine; dendritic cell;  
KW tumour infiltrating lymphocyte; TIL; human leucocyte antigen; HLA;  
KW cytostatic; human.

OS Homo sapiens.

PN WO200264057-A2.

PD 22-AUG-2002.

PF 15-FEB-2002; 2002WO-US005212.

PR 15-FEB-2001; 2001US-0268687P.

PA (BAYL ) BAYLOR COLLEGE MEDICINE.

PI Wang R;

PI WPI; 2002-627577/67.

PT Novel composition for treating a disease in an animal, comprises an  
PT immune effector cell and cell penetrating peptide associated with an  
PT antigen or antibody.

PS Disclosure; Page 17; 61pp; English.

XX The invention relates to a composition (I) comprising an immune effector  
CC cell and a cell penetrating peptide (CPP) associated with an antigen or  
CC antibody. Also included are (1) a vaccine comprising (I), CPP associated  
CC with an antigen, and a pharmaceutically acceptable carrier and (2)  
CC preparing a composition for a disease, by providing (I) and CPP  
CC associated with an antigen for a disease, and introducing the antigen-  
CC associated CPP to (1), where antigen enters into the cell. The antigens  
CC are, for example, tumour antigen derived epitopes recognised by tumour  
CC infiltrating lymphocytes (TIL) of HLA (human leucocyte antigen) class I  
CC or II. The composition is useful for enhancing immunity in an animal to a  
CC disease, by administering a mature dendritic cell comprising CPP  
CC associated with an antigen to disease, to the animal, such that following  
CC the administration, animal is protected from disease, where the animal  
CC comprises both CD4+ and CD8+ T cells. It is also useful for treating a  
CC disease (e.g. cancer, tumour, melanoma, thymoma, lymphoma, sarcoma, lung  
CC cancer, non-Hodgkin's lymphoma, leukaemia, Hodgkin's lymphoma, uterine  
CC cancer, cervical cancer, bladder cancer, kidney cancer, adenocarcinoma,  
CC breast cancer, prostate cancer, ovarian cancer and pancreatic cancer).  
CC The animal is further subjected to a cancer treatment including surgery,  
CC radiation, chemotherapy or gene therapy. The administration of (I),  
CC preferably dendritic cell is prior to, subsequent to or concurrent with,  
CC the cancer treatment. The present sequence is a tumour antigen derived  
CC epitope for inclusion in the composition of the invention

SQ Sequence 10 AA;

Alignment Scores:

Pred. No.: 153 Length: 10

```
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABG79072 (1-10)

OY 94 ATGCTGATGCCAGAGCCCTGCATTC 123
Db 1 MetLeuMetAlaGlnGlnAlaLeuAlaPhe 10

RESULT 225
ABG79130
ID ABG79130 standard; peptide: 10 AA.
AC ABG79130;
XX
XX 15-NOV-2002 (first entry)
DT
DE Human NY-ESO-1 class II HLA tumour-restricted antigen peptide #1.
KW Cell penetrating peptide; cancer; tumour; melanoma; thymoma; antigen;
KW lymphoma; sarcoma; lung cancer; non-Hodgkin's lymphoma; leukaemia;
KW Hodgkin's lymphoma; uterine cancer; cervical cancer; bladder cancer;
KW kidney cancer; adenocarcinoma; breast cancer; prostate cancer;
KW ovarian cancer; pancreatic cancer; epidermis; vaccine; dendritic cell;
KW tumour infiltrating lymphocyte; TIL; human leukocyte antigen; HLA;
KW cytostatic; human.
XX
XX Homo sapiens.
OS
XX MO200264057-A2.
PN
XX 22-AUG-2002.
PD
XX 15-FEB-2002; 2002WO-US005212.
PF
XX 15-FEB-2001; 2001US-0268687P.
PR
XX (BAYU ) BAYLOR COLLEGE MEDICINE.
XX
XX Wang R;
PI
XX
XX WPI: 2002-627577/67.
DR
XX
XX Novel composition for treating a disease in an animal, comprises an
PT immune effector cell and cell penetrating peptide associated with an
PT antigen or antibody.
XX
XX Disclosure; Page 21; 61pp; English.
XX
XX The invention relates to a composition (I) comprising an immune effector
CC cell and a cell penetrating peptide (CPP) associated with an antigen or
CC antibody. Also included are (1) a vaccine comprising (II), CPP associated
CC with an antigen, and a pharmaceutically acceptable carrier and (2)
CC preparing a composition for a disease, by providing (I) and CPP
CC associated with an antigen for disease, and introducing the antigen-
CC associated CPP to (I), where antigen enters into the cell. The antigens
CC are, for example, tumour antigen derived epitopes recognised by tumour
CC infiltrating lymphocytes (TIL) of HLA (human leukocyte antigen) class I
CC or II. The composition is useful for enhancing immunity in an animal to a
CC disease, by administering a mature dendritic cell comprising CPP
CC associated with an antigen to disease, to the animal, such that following
CC the administration, animal is protected from disease, where the animal
CC comprises both CD4+ and CD8+ T cells. It is also useful for treating a
CC disease (e.g. cancer, tumour, melanoma, thymoma, lymphoma, sarcoma, lung
CC cancer, non-Hodgkin's lymphoma, leukaemia, Hodgkin's lymphoma, uterine
CC cancer, cervical cancer, bladder cancer, kidney cancer, adenocarcinoma,
CC breast cancer, prostate cancer, ovarian cancer and pancreatic cancer).
CC The animal is further subjected to a cancer treatment including surgery,
CC radiation, chemotherapy or gene therapy. The administration of (I),
CC preferably dendritic cell is prior to, subsequent to or concurrent with,
```

```
CC the cancer treatment. The present sequence is a tumour antigen derived
CC epitope for inclusion in the composition of the invention
XX
XX SQ Sequence 10 AA;
XX
XX Alignment Scores:
XX Pred. No.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABG79130 (1-10)

OY 414 GTGCTTGAGAGGATTCTACTGTGTCGGC 443
Db 1 ValLeuLeuYsgIuPheTrValSerGly 10

RESULT 226
ABG66803
ID ABG66803 standard; peptide: 10 AA.
XX
XX ABG66803;
AC
XX 24-SEP-2002 (first entry)
DT
DE Tumour antigen NY-ESO-1/CAG3 ORP2, HLA-A31 epitope.
XX
XX Beta-2 microglobulin; beta-2m; cytotoxic T lymphocyte; CTL; HLA;
KW human leukocyte antigen; fusion protein; epitope; cytostatic; tumour;
KW gastrointestinal tumour; colorectal cancer; gastro-oesophageal cancer;
KW liver cancer; biliary tract cancer; pancreatic cancer; vaccine;
KW prostatic cancer; testicular cancer; lung cancer; breast cancer;
KW malignant melanoma; mesothelioma; brain tumour; ovarian cancer;
KW uterine cancer; cervical cancer; head and neck cancer; bladder cancer;
KW Kaposi's sarcoma; renal carcinoma; leukaemia; lymphoma;
KW acquired immunodeficiency syndrome; AIDS-related lymphoma.
XX
XX Homo sapiens.
OS
XX WO200236146-A2.
PN
XX
XX 10-MAY-2002.
PD
XX 01-NOV-2001; 2001WO-GB004844.
PF
XX 02-NOV-2000; 2000GB-00026812.
PR
XX (ISIS-) ISIS INNOVATION LTD.
PA
XX Tafuro S, Meier U, Memichael AJ, Bell JT, Layton G, Hunter M;
PI WPI: 2002-508108/54.
XX
XX New polynucleotide capable of expressing an epitope-beta2m fusion protein
PT useful for generating cytotoxic T lymphocyte responses against a tumor
PT and in restoring antigen presentation in the tumor of a host.
XX
XX Disclosure; Page 25; 46pp; English.
XX
XX The invention relates to a new polynucleotide capable of expressing an
CC epitope-beta2m fusion protein useful for generating cytotoxic T
CC lymphocyte (CTL) responses against a tumour or in restoring antigen
CC presentation in the tumour of a host. Also included are a polynucleotide
CC capable of expressing an epitope-beta2m fusion protein in combination
CC with a vaccination agent that stimulates a CTL response against the
CC epitope of the fusion protein for simultaneous, separate or sequential
CC use in the treatment of cancer and a method of treating a tumour by
CC administering a capable of expressing an epitope-beta2m fusion protein,
CC and optionally a vaccination agent that stimulates a CTL response against
CC the epitope of the fusion protein. The polynucleotide is useful for
CC generating CTL responses against tumours, for restoring antigen
```

CC presentation in the tumour, and subsequently for treating cancers, such  
CC as gastrointestinal tumour, prostatic, testicular, lung or breast cancer,  
CC malignant melanoma, mesothelioma, brain tumour, ovarian cancer, uterine  
CC cancer including cervical cancer, cancer of the head and neck, bladder  
CC cancer, Kaposi's sarcoma, AIDS (acquired immunodeficiency syndrome) -  
CC related Kaposi's sarcoma, sarcomas, osteosarcoma, renal carcinoma, and  
CC haematopoietic malignant tumours such as leukaemia and lymphoma. The  
CC epitope is an HLA (human leukocyte antigen) peptide derived from a viral  
CC or tumour antigen. The present sequence is a tumour HLA epitope used in  
CC the fusion proteins of the invention

SQ Sequence 10 AA:

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x ABG66803 (1-10)

OY 145 CTGGCGGCGCCGAGAGCGGCGTCCACGG 174

Db 1 LeuAlaAlaGlnGluArgValProArg 10

RESULT 227

ABG66802

ID ABG66802 standard; peptide; 10 AA.

XX ABG66802;

DT 24-SEP-2002 (first entry)

XX

DE Tumour antigen NY-ESO-1/CAG3 ORF1, HLA-A31 epitope.

XX

KW Beta-2 microglobulin; beta-2m; cytotoxic T lymphocyte; CTL; HLA;  
KW human leukocyte antigen; fusion protein; epitope; cytostatic; tumour;  
KW gastrointestinal tumour; colorectal cancer; gastro-oesophageal cancer;  
KW liver cancer; biliary tract cancer; pancreatic cancer; vaccine;  
KW prostatic cancer; testicular cancer; lung cancer; breast cancer;  
KW malignant melanoma; mesothelioma; brain tumour; ovarian cancer;  
KW uterine cancer; cervical cancer; head and neck cancer; bladder cancer;  
KW Kaposi's sarcoma; renal carcinoma; leukaemia; lymphoma;  
KW acquired immunodeficiency syndrome; AIDS-related lymphoma.

XX

OS Homo sapiens.

XX

PN WO200236146-A2.

XX

PD 10-MAY-2002.

XX

PF 01-NOV-2001; 2001WO-GB004844.

XX

PR 02-NOV-2000; 2000GB-00026812.

XX

PA (ISIS-) ISIS INNOVATION LTD.

XX

PI Tafuro S, Meier U, Memichael AJ, Bell JI, Layton G, Hunter M;  
XX WPI; 2002-508108/54.

XX

DR

XX

PT New polynucleotide capable of expressing an epitope-beta2m fusion protein  
XX useful for generating cytotoxic T lymphocyte responses against a tumor  
XX and in restoring antigen presentation in the tumor of a host.

XX

PS Disclosure; Page 25; 46pp; English.

XX

CC The invention relates to a new polynucleotide capable of expressing an  
XX epitope-beta 2m fusion protein useful for generating cytotoxic T  
XX lymphocyte (CTL) responses against a tumour or in restoring antigen  
XX presentation in the tumour of a host. Also included are a polynucleotide

CC capable of expressing an epitope-beta-2m fusion protein in combination  
CC with a vaccination agent that stimulates a CTL response against the  
CC epitope of the fusion protein for simultaneous, separate or sequential  
CC use in the treatment of cancer and a method of treating a tumour by  
CC administering a capable of expressing an epitope-beta 2m fusion protein,  
CC and optionally a vaccination agent that stimulates a CTL response against  
CC the epitope of the fusion protein. The polynucleotide is useful for  
CC generating CTL responses against tumours, for restoring antigen  
CC presentation in the tumour, and subsequently for treating cancers, such  
CC as gastrointestinal tumour, prostatic, testicular, lung or breast cancer,  
CC malignant melanoma, mesothelioma, brain tumour, ovarian cancer, uterine  
CC cancer including cervical cancer, cancer of the head and neck, bladder  
CC cancer, Kaposi's sarcoma, AIDS (acquired immunodeficiency syndrome) -  
CC related Kaposi's sarcoma, sarcomas, osteosarcoma, renal carcinoma, and  
CC haematopoietic malignant tumours such as leukaemia and lymphoma. The  
CC epitope is an HLA (human leukocyte antigen) peptide derived from a viral  
CC or tumour antigen. The present sequence is a tumour HLA epitope used in  
CC the fusion proteins of the invention

SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x ABG66802 (1-10)

OY 210 GCCTGGGCGCCGAGAGCGCGCCCGCGG 239

Db 1 AlaSerGlyProGlyGlyAlaProArg 10

RESULT 228

ABP74299

ID ABP74299 standard; peptide; 10 AA.

XX AC ABP74299;

XX

DT 03-FEB-2003 (first entry)

XX

DE Human NY-ESO-1 epitope SEQ ID NO:183.

XX

KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.

XX

OS Homo sapiens.

XX

PN WO200281646-A2.

XX

PD 17-OCT-2002.

XX

PF 04-APR-2002; 2002WO-US011101.

XX

PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.

XX

PA (CTL-) CTL IMMUNOTHERAPIES CORP.

XX

PI Simard JDL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-067518/06.

XX

DR

XX

PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
XX encoding the peptides, that are useful epitopes of target-associated  
XX antigens.

XX

PS Claim 1; Page 18; 352pp; English.

XX

CC The present invention describes an isolated epitope (I) and an epitope

CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX  
SQ Sequence 10 AA;  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74299 (1-10)  
QY 402 CCCGTCGCCGGGCTTCTGAGAGATTTC 431  
DB 1 ProValProGlyValLeuLeuLysGluPhe 10  
RESULT 229  
ABP74302  
ID ABP74302 standard; peptide; 10 AA.  
XX  
AC ABP74302;  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:186.  
XX  
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX  
OS Homo sapiens.  
XX  
PN MO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002MO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-067518/06.  
XX  
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
PS Claim 1; Page 18; 352pp; English.  
XX  
CC The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is

CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX  
SQ Sequence 10 AA;  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74302 (1-10)  
QY 429 TTCACGTGTCGCGGCAACATAGCTGACTATC 458  
DB 1 PheThrValSerGlyAsnIleLeuThrIle 10  
RESULT 230  
ABP74317  
ID ABP74317 standard; peptide; 10 AA.  
XX  
AC ABP74317;  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:201.  
XX  
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX  
OS Homo sapiens.  
XX  
PN MO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002MO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-067518/06.  
XX  
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
PS Claim 1; Page 18; 352pp; English.  
XX  
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CC immunogenicity of a vaccine or immunotherapeutic composition, by  
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CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is

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CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention

XX SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x ABP74317 (1-10)

QY 501 AGCTCTGTCTCCAGCAGCTTCCCTGTTG 530  
DB 1 SerSerCysLeuGlnGlnLeuSerLeuLeu 10

RESULT 231  
ABP74295  
ID ABP74295 standard; peptide; 10 AA.  
XX AC ABP74295;  
XX DT 03-FEB-2003 (first entry)  
XX DE Human NY-ESO-1 epitope SEQ ID NO:179.  
XX DE Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX T cell.  
XX KM Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX T cell.  
XX OS Homo sapiens.  
XX PN WO200281646-A2.  
XX PD 17-OCT-2002.  
XX PF 04-APR-2002; 2002WO-US011101.  
XX PR 06-APR-2001; 2001US-0282211P.  
XX PR 07-NOV-2001; 2001US-0337017P.  
XX PR 07-MAR-2002; 2002US-0363210P.  
XX PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-067518/06.  
XX DR WPI; 2003-067518/06.  
XX PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
XX encoding the peptides, that are useful epitopes of target-associated  
XX antigens.  
XX PS Claim 1; Page 18; 352pp; English.

CC The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
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CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to

CC ABP74713 represent sequences used in the exemplification of the present  
CC invention

XX SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x ABP74295 (1-10)

QY 393 CCACCGCTCCCGTGCAGGGGCTCTTG 422  
DB 1 ProProLeuProValProGlyValLeuLeu 10

RESULT 232  
ABP74292  
ID ABP74292 standard; peptide; 10 AA.  
XX AC ABP74292;  
XX DT 03-FEB-2003 (first entry)  
XX DE Human NY-ESO-1 epitope SEQ ID NO:176.  
XX DE Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX T cell.  
XX KM Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX T cell.  
XX OS Homo sapiens.  
XX PN WO200281646-A2.  
XX PD 17-OCT-2002.  
XX PF 04-APR-2002; 2002WO-US011101.  
XX PR 06-APR-2001; 2001US-0282211P.  
XX PR 07-NOV-2001; 2001US-0337017P.  
XX PR 07-MAR-2002; 2002US-0363210P.  
XX PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-067518/06.  
XX DR WPI; 2003-067518/06.  
XX PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
XX encoding the peptides, that are useful epitopes of target-associated  
XX antigens.  
XX PS Claim 1; Page 18; 352pp; English.

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CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
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CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention

XX SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

US-10-023-182-1 (1-752) x ABP74292 (1-10)

QY 330 GCCATGCTTCGCGACACCCATGGAGCA 359  
 |||||  
 ID ABP74287 1 AlameetProphetAlatThPromeccluala 10

RESULT 233

ABP74287  
 ID ABP74287 standard; peptide; 10 AA.  
 XX  
 AC ABP74287;  
 XX  
 DT 03-FEB-2003 (first entry)  
 XX  
 DE Human NY-ESO-1 epitope SEQ ID NO:171.  
 XX  
 DE Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
 KW T cell.  
 KM  
 OS Homo sapiens.  
 XX  
 PN WO200281646-A2.  
 XX  
 PD 17-OCT-2002.  
 XX  
 PF 04-APR-2002; 2002WO-US011101.  
 XX  
 PR 06-APR-2001; 2001US-0282211P.  
 PR 07-NOV-2001; 2001US-0337017P.  
 PR 07-MAR-2002; 2002US-0363210P.  
 XX  
 PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
 XX  
 PI Simard JTL, Diamond DC, Liu L, Xie Z;  
 XX  
 DR WPI; 2003-067518/06.  
 XX  
 PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
 PT encoding the peptides, that are useful epitopes of target-associated  
 PT antigens.  
 PS  
 XX Claim 1; Page 17; 352pp; English.  
 XX  
 CC The present invention describes an isolated epitope (I) and an epitope  
 CC cluster. Also described is a vaccine or immunotherapeutic composition  
 CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
 CC treating an animal, by administering to an animal the vaccine or  
 CC immunotherapeutic composition. VC is also useful for evaluating  
 CC immunogenicity of a vaccine or immunotherapeutic composition, by  
 CC administering VC to an HLA-transgenic animal and evaluating  
 CC immunogenicity based on a characteristic of the animal, or by in vitro  
 CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
 CC useful for determining specific T cell frequency, by contacting T cells  
 CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
 CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
 CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
 CC ABP74713 represent sequences used in the exemplification of the present  
 CC invention  
 CC  
 SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABP74287 (1-10)

QY 297 GGGCGAGAGCGCGCTTGAGTTCTAC 326  
 |||||  
 DB 1 GLYProGUserArgLeuGluPheYr 10

RESULT 234

ABP74474  
 ID ABP74474 standard; peptide; 10 AA.  
 XX  
 AC ABP74474;  
 XX  
 DT 03-FEB-2003 (first entry)  
 XX  
 DE Human NY-ESO-1 epitope SEQ ID NO:358.  
 XX  
 DE Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
 KW T cell.  
 KM  
 OS Homo sapiens.  
 XX  
 PN WO200281646-A2.  
 XX  
 PD 17-OCT-2002.  
 XX  
 PF 04-APR-2002; 2002WO-US011101.  
 XX  
 PR 06-APR-2001; 2001US-0282211P.  
 PR 07-NOV-2001; 2001US-0337017P.  
 PR 07-MAR-2002; 2002US-0363210P.  
 XX  
 PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
 XX  
 PI Simard JTL, Diamond DC, Liu L, Xie Z;  
 XX  
 DR WPI; 2003-067518/06.  
 XX  
 PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
 PT encoding the peptides, that are useful epitopes of target-associated  
 PT antigens.  
 PS  
 XX Claim 1; Page 22; 352pp; English.  
 XX  
 CC The present invention describes an isolated epitope (I) and an epitope  
 CC cluster. Also described is a vaccine or immunotherapeutic composition  
 CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
 CC treating an animal, by administering to an animal the vaccine or  
 CC immunotherapeutic composition. VC is also useful for evaluating  
 CC immunogenicity of a vaccine or immunotherapeutic composition, by  
 CC administering VC to an HLA-transgenic animal and evaluating  
 CC immunogenicity based on a characteristic of the animal, or by in vitro  
 CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
 CC useful for determining specific T cell frequency, by contacting T cells  
 CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
 CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
 CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
 CC ABP74713 represent sequences used in the exemplification of the present  
 CC invention  
 CC  
 SQ Sequence 10 AA;

Alignment Scores:

|                        |         |               |    |
|------------------------|---------|---------------|----|
| Pred. No.:             | 153     | Length:       | 10 |
| Score:                 | 10.00   | Matches:      | 10 |
| Percent Similarity:    | 100.00% | Conservative: | 0  |
| Best Local Similarity: | 100.00% | Mismatches:   | 0  |
| Query Match:           | 5.56%   | Indels:       | 0  |
| DB:                    | 1       | Gaps:         | 0  |

```
US-10-023-182-1 (1-752) x ABP74474 (1-10)
QY      231 GCGCGGCGGCGCATGCGCGCGGCT 260
DB      1 AAlProHArgGlyProHISGLYAlaAla 10

RESULT 235
ID      ABP74297 standard; peptide; 10 AA.
XX      ABP74297;
AC      ABP74297;
XX      03-FEB-2003 (first entry)
DT      03-FEB-2003 (first entry)
XX      Human NY-ESO-1 epitope SEQ ID NO:181.
DE      Human NY-ESO-1 epitope SEQ ID NO:181.
XX      Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KM      T cell.
XX      Homo sapiens.
OS      Homo sapiens.
XX      WO200281646-A2.
PN      WO200281646-A2.
XX      17-OCT-2002.
PD      17-OCT-2002.
XX      04-APR-2002; 2002WO-US011101.
PF      04-APR-2002; 2002WO-US011101.
XX      06-APR-2001; 2001US-0282211P.
PR      07-NOV-2001; 2001US-0337017P.
XX      07-MAR-2002; 2002US-0363210P.
PR      07-MAR-2002; 2002US-0363210P.
XX      (CTLI-) CTL IMMUNOTHERAPIES CORP.
PA      (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX      Simard JTL, Diamond DC, Liu L, Xie Z;
PI      WPI; 2003-067518/06.
XX      WPI; 2003-067518/06.
DR      WPI; 2003-067518/06.
XX      Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT      encoding the peptides, that are useful epitopes of target-associated
XX      antigens.
XX      Claim 1; Page 18; 352pp; English.
XX      The present invention describes an isolated epitope (I) and an epitope
CC      cluster. Also described is a vaccine or immunotherapeutic composition
CC      (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC      treating an animal, by administering to an animal the vaccine or
CC      immunotherapeutic composition. VC is also useful for evaluating
CC      immunogenicity of a vaccine or immunotherapeutic composition, by
CC      administering VC to an HLA-transgenic animal and evaluating
CC      immunogenicity based on a characteristic of the animal, or by in vitro
CC      primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC      useful for determining specific T cell frequency, by contacting T cells
CC      with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC      limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC      polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to
CC      ABP74173 represent sequences used in the exemplification of the present
CC      invention
XX      SQ      Sequence 10 AA;
XX      Alignment Scores:
XX      Pred. No.:      153      Length:      10
XX      Score:          10.00      Matches:      10
XX      Percent Similarity: 100.00%      Conservative: 0
XX      Best Local Similarity: 100.00%      Mismatches: 0
XX      Query Match:      5.56%      Indels:      0
XX      DB:              1      Gaps:          0
US-10-023-182-1 (1-752) x ABP74297 (1-10)
QY      360 GAGCTGGCGCCGAGAGCCTGCGCCAGGAT 389
```

```
DB      1 GILueAlaArgSerLeuAlaGlnasp 10

RESULT 236
ID      ABP74473 standard; peptide; 10 AA.
XX      ABP74473;
AC      ABP74473;
XX      03-FEB-2003 (first entry)
DT      03-FEB-2003 (first entry)
XX      Human NY-ESO-1 epitope SEQ ID NO:357.
DE      Human NY-ESO-1 epitope SEQ ID NO:357.
XX      Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KM      T cell.
XX      Homo sapiens.
OS      Homo sapiens.
XX      WO200281646-A2.
PN      WO200281646-A2.
XX      17-OCT-2002.
PD      17-OCT-2002.
XX      04-APR-2002; 2002WO-US011101.
PF      04-APR-2002; 2002WO-US011101.
XX      06-APR-2001; 2001US-0282211P.
PR      07-NOV-2001; 2001US-0337017P.
XX      07-MAR-2002; 2002US-0363210P.
PR      07-MAR-2002; 2002US-0363210P.
XX      (CTLI-) CTL IMMUNOTHERAPIES CORP.
PA      (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX      Simard JTL, Diamond DC, Liu L, Xie Z;
PI      WPI; 2003-067518/06.
XX      WPI; 2003-067518/06.
DR      WPI; 2003-067518/06.
XX      Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT      encoding the peptides, that are useful epitopes of target-associated
XX      antigens.
XX      Claim 1; Page 22; 352pp; English.
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CC      treating an animal, by administering to an animal the vaccine or
CC      immunotherapeutic composition. VC is also useful for evaluating
CC      immunogenicity of a vaccine or immunotherapeutic composition, by
CC      administering VC to an HLA-transgenic animal and evaluating
CC      immunogenicity based on a characteristic of the animal, or by in vitro
CC      primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC      useful for determining specific T cell frequency, by contacting T cells
CC      with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC      limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC      polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to
CC      ABP74173 represent sequences used in the exemplification of the present
CC      invention
XX      SQ      Sequence 10 AA;
XX      Alignment Scores:
XX      Pred. No.:      153      Length:      10
XX      Score:          10.00      Matches:      10
XX      Percent Similarity: 100.00%      Conservative: 0
XX      Best Local Similarity: 100.00%      Mismatches: 0
XX      Query Match:      5.56%      Indels:      0
XX      DB:              1      Gaps:          0
US-10-023-182-1 (1-752) x ABP74473 (1-10)
QY      240 GGTCCGATGCGCGCGGCTTCAGGCGCTG 269
DB      1 GLYProHISGLYGLYAlaAlaSerGlyLeu 10

RESULT 237
```



ABP74291  
XX ID ABP74291 standard; peptide; 10 AA.  
XX AC ABP74291;  
XX DT 03-FEB-2003 (first entry)  
XX DE Human NY-ESO-1 epitope SEQ ID NO:175.  
XX DE Human NY-ESO-1 epitope SEQ ID NO:175.  
XX KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX KW T cell.  
XX OS Homo sapiens.  
XX OS WO200281646-A2.  
XX PD 17-OCT-2002.  
XX PF 04-APR-2002; 2002WO-US011101.  
XX PR 06-APR-2001; 2001US-0282211P.  
XX PR 07-NOV-2001; 2001US-0337017P.  
XX PR 07-MAR-2002; 2002US-0363210P.  
XX PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX PI Simard JUL, Diamond DC, Liu L, Xie Z;  
XX DR WPI; 2003-067518/06.  
XX XX  
XX PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
XX PT encoding the peptides, that are useful epitopes of target-associated  
XX PT antigens.  
XX PS Claim 1; Page 18; 352pp; English.  
XX XX  
CC The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX SQ Sequence 10 AA;  
XX XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74291 (1-10)  
QY 312 CTGCTTGAGTTCTACCTGCGCATGCTTTC 341  
Db 1 LeuLeuGluPheTyrLeuAlaMetProPhe 10  
RESULT 238  
ABP74304  
XX ID ABP74304 standard; peptide; 10 AA.  
XX AC ABP74304;  
XX XX

XX XX  
XX DT 03-FEB-2003 (first entry)  
XX DE Human NY-ESO-1 epitope SEQ ID NO:188.  
XX DE Human NY-ESO-1 epitope SEQ ID NO:188.  
XX KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX KW T cell.  
XX OS Homo sapiens.  
XX OS WO200281646-A2.  
XX PN 17-OCT-2002.  
XX PD 17-OCT-2002.  
XX PF 04-APR-2002; 2002WO-US011101.  
XX PR 06-APR-2001; 2001US-0282211P.  
XX PR 07-NOV-2001; 2001US-0337017P.  
XX PR 07-MAR-2002; 2002US-0363210P.  
XX PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX PI Simard JUL, Diamond DC, Liu L, Xie Z;  
XX DR WPI; 2003-067518/06.  
XX XX  
XX PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
XX PT encoding the peptides, that are useful epitopes of target-associated  
XX PT antigens.  
XX PS Claim 1; Page 18; 352pp; English.  
XX XX  
CC The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX SQ Sequence 10 AA;  
XX XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74304 (1-10)  
QY 414 GTGCTTGAGAGTTCACGTGTCGGC 443  
Db 1 ValLeuLeuYsgLuphMetValSerGly 10  
RESULT 239  
ABP74307  
XX ID ABP74307 standard; peptide; 10 AA.  
XX AC ABP74307;  
XX DT 03-FEB-2003 (first entry)  
XX DE Human NY-ESO-1 epitope SEQ ID NO:191.  
XX XX

XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX  
XX Homo sapiens.  
OS  
XX WO200281646-A2.  
PN  
XX  
XX 17-OCT-2002.  
PD  
XX  
XX 04-APR-2002; 2002WO-US011101.  
PF  
XX  
XX 06-APR-2001; 2001US-0282211P.  
PR  
XX 07-NOV-2001; 2001US-0337017P.  
PR  
XX 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
XX  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
PI  
XX WPI; 2003-067518/06.  
DR  
XX  
XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
XX  
XX Claim 1; Page 18; 352pp; English.  
PS  
XX  
XX The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
CC  
XX  
XX SQ Sequence 10 AA;  
XX  
XX  
XX Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74307 (1-10)  
QY 402 CCGGTGCGAGGGGCTCTTCTGAAGAGTTTC 431  
DB 1 ProValProGlyValLeuLeuLysGluPhe 10  
RESULT 240  
ABP74310  
ID ABP74310 standard; peptide; 10 AA.  
XX  
XX ABP74310;  
AC  
XX  
XX 03-FEB-2003 (first entry)  
DT  
XX  
XX Human NY-ESO-1 epitope SEQ ID NO:194.  
DE  
XX  
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX

OS Homo sapiens.  
XX  
XX WO200281646-A2.  
PN  
XX  
XX 17-OCT-2002.  
PD  
XX  
XX 04-APR-2002; 2002WO-US011101.  
PF  
XX  
XX 06-APR-2001; 2001US-0282211P.  
PR  
XX 07-NOV-2001; 2001US-0337017P.  
PR  
XX 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
XX  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
PI  
XX WPI; 2003-067518/06.  
DR  
XX  
XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
XX  
XX Claim 1; Page 18; 352pp; English.  
PS  
XX  
XX The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
CC  
XX  
XX SQ Sequence 10 AA;  
XX  
XX  
XX Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74310 (1-10)  
QY 492 CTTCCATCAGCTCTGCTCTCCAGACGTT 521  
DB 1 LeuSerIleSerSerCysLeuGlnGlnLeu 10  
RESULT 241  
ABP74311  
ID ABP74311 standard; peptide; 10 AA.  
XX  
XX ABP74311;  
AC  
XX  
XX 03-FEB-2003 (first entry)  
DT  
XX  
XX Human NY-ESO-1 epitope SEQ ID NO:195.  
DE  
XX  
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX  
XX Homo sapiens.  
OS  
XX  
XX WO200281646-A2.  
PN  
XX

PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JLL, Diamond DC, Liu L, Xie Z;  
DR WPI; 2003-067518/06.  
XX  
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
PS Claim 1; Page 18; 352pp; English.  
XX  
CC The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention.  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. NO.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74311 (1-10)  
OY 465 ACTGCTGCAGACACCGCCAACTGCAGCTC 494  
Db |||||  
1 ThrAlaAlaPheHisArgGlnLeuGlnLeu 10  
RESULT 242  
ABP74319  
ID ABP74319 standard; peptide; 10 AA.  
XX  
AC ABP74319;  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO.203.  
XX  
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX  
OS Homo sapiens.  
XX  
PN WO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX

PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JLL, Diamond DC, Liu L, Xie Z;  
DR WPI; 2003-067518/06.  
XX  
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
PS Claim 1; Page 18; 352pp; English.  
XX  
CC The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention.  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. NO.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74319 (1-10)  
OY 537 ATCAGCAGGCTTTCGCCGCTTTT 566  
Db |||||  
1 IleThrGlnCysPheLeuProValPheLeu 10  
RESULT 243  
ABU64848  
ID ABU64848 standard; peptide; 10 AA.  
XX  
AC ABU64848;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #32.  
XX  
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US200216465-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX

```

PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SPREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 10 AA;
XX
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Conservative: 10
Percent Similarity: 100.00% Mismatches: 0
Best Local Similarity: 100.00% Indels: 0
Query Match: 1 Gaps: 0
US-10-023-182-1 (1-752) x ABU64848 (1-10)
OY 231 GCCCGCGGCGTCCGATGCGCGCGGCT 260
DB 1 AAlProArGgLyProHisGlyGlyAlaAla 10
RESULT 244
ABU64843
ID ABU64843 standard; peptide; 10 AA.
XX
AC ABU64843;
XX
DT 14-MAY-2003 (first entry)
XX

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```

DE Human NY-ESO-1 HLA binding motif #27.
XX
KW Human; antigen; NY-ESO-1; cancer; SPREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
FN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SPREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 10 AA;
XX
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Conservative: 10
Percent Similarity: 100.00% Mismatches: 0
Best Local Similarity: 100.00% Indels: 0

```

```

Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ABU64853 (1-10)

Qy 396 CCGCTCCCGTCCAGGGGTCCTTGAG 425
    |||||
Db 1 ProleuProValProGlyValLeuLeuLys 10

RESULT 245
ABU64853
ID ABU64853 standard; peptide; 10 AA.
AC ABU64853;
DT 14-MAY-2003 (first entry)
DE Human NY-ESO-1 HLA binding motif #37.
XX
XX Human; antigen; NY-ESO-1; cancer; SREX; cytosolic; immunosuppressive;
KM serological identification of antigens by recombinant expression cloning;
KM melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;
KM lung cancer; ovarian cancer; thyroid cancer; bladder cancer;
KM autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KM human leukocyte antigen; HLA binding motif.
XX
XX Homo sapiens.
OS
XX
XX US2002164665-A1.
XX
XX 07-NOV-2002.
XX
XX 17-DEC-2001; 2001US-00023182.
XX
XX 03-OCT-1996; 96US-00725182.
XX
XX 15-SEP-1997; 97US-00937263.
XX
XX 29-DEC-2000; 2000US-00751798.
XX
XX (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
XX WPI; 2003-298695/29.
XX
XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful
XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
XX prostate, lung, ovarian, thyroid or bladder cancer, infections or
XX autoimmune disorders.
XX
XX Example 13; Page 7; 18pp; English.
XX
XX The invention relates to an isolated antibody or binding fragment of an
XX antibody, which binds with a protein that is encoded by an isolated
XX nucleic acid molecule the complementary sequence of which hybridises
XX under stringent conditions to a nucleic acid molecule comprising the
XX nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
XX ABX96656. Also included are a hybridoma cell line producing the novel
XX monoclonal antibody, screening for cancer in a sample (by contacting the
XX sample with the isolated antibody, and determining binding of the novel
XX antibody to a target as an indicator of cancer), determining
XX against a cancer-associated antigen in a sample, determining
XX regression/progression/onset of a cancerous condition (by monitoring a
XX sample from a patient with the cancerous condition from parameters such
XX as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
XX antibody that binds to it, where the amount of the parameter is
XX indicative of progression, regression or onset of cancerous conditions),
XX and treating a subject afflicted with a cancerous condition by
XX administering to the subject an antibody that specifically binds to NY-

```

```

CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SREX
CC. (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
XX Sequence 10 AA;
XX
XX Alignment Scores:
XX Pred. NO.: 153 Length: 10
XX Score: 10.00 Matches: 10
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.56% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABU64853 (1-10)

Qy 510 CTCGAGAGCTTTCCTGTTGATGTGATC 539
    |||||
Db 1 LengInLeuSerLeuLeuMetTrpIle 10

RESULT 246
ABU64852
ID ABU64852 standard; peptide; 10 AA.
XX
XX AC ABU64852;
XX
XX DT 14-MAY-2003 (first entry)
XX
XX DE Human NY-ESO-1 HLA binding motif #36.
XX
XX Human; antigen; NY-ESO-1; cancer; SREX; cytosolic; immunosuppressive;
KM serological identification of antigens by recombinant expression cloning;
KM melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;
KM lung cancer; ovarian cancer; thyroid cancer; bladder cancer;
KM autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KM human leukocyte antigen; HLA binding motif.
XX
XX Homo sapiens.
OS
XX
XX US2002164665-A1.
XX
XX 07-NOV-2002.
XX
XX 17-DEC-2001; 2001US-00023182.
XX
XX 03-OCT-1996; 96US-00725182.
XX
XX 15-SEP-1997; 97US-00937263.
XX
XX 29-DEC-2000; 2000US-00751798.
XX
XX (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
XX WPI; 2003-298695/29.
XX
XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful
XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
XX prostate, lung, ovarian, thyroid or bladder cancer, infections or
XX autoimmune disorders.
XX
XX Example 13; Page 7; 18pp; English.
XX

```

CC The invention relates to an isolated antibody or binding fragment of an  
 CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridizes  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC infections or autoimmune disorders. The present sequence represents an  
 CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
 CC  
 SQ Sequence 10 AA;

Alignment Scores:  
 Pred. No.: 153 Length: 10  
 Score: 10.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABU64852 (1-10)

QY 513 CAGCAGCTTCCGCTTGATGATGATCAG 542

DB 1 GINGINLESerleuWetrllethr 10

RESULT 247

ID ABU64851 standard; peptide; 10 AA.

XX ABU64851;

DT 14-MAY-2003 (first entry)

DE Human NY-ESO-1 HLA binding motif #35.

XX Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;

KW serological identification of antigens by recombinant expression cloning;

KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;

KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;

KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;

XX human leukocyte antigen; HLA binding motif.

OS Homo sapiens.

PN US2002164665-A1.

PD 07-NOV-2002.

XX 17-DEC-2001; 2001US-00023182.

XX 03-OCT-1996; 96US-00725182.

PR 15-SEP-1997; 97US-00937263.

PR 29-DEC-2000; 2000US-00751798.

XX (STOC/) STOCKERT E.

PA (JAGE/) JAGER E.  
 PA (CHEN/) CHEN Y.  
 PA (SCAN/) SCANLAN M.  
 PA (ALEX/) ALEXANDER K.  
 PA (OLDL/) OLD L J.  
 PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
 DR WPI, 2003-298695/29.  
 PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
 PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
 PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
 PT autoimmune disorders.  
 PS Example 13; Page 7; 18pp; English.

CC The invention relates to an isolated antibody or binding fragment of an  
 CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridizes  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC infections or autoimmune disorders. The present sequence represents an  
 CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
 CC  
 SQ Sequence 10 AA;

Alignment Scores:  
 Pred. No.: 153 Length: 10  
 Score: 10.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABU64851 (1-10)

QY 390 GCCCAGCGCTTCCGCTTGATGATGATCAG 419

DB 1 AlabProProlenProValProGlyValleu 10

RESULT 248

ID ABU64842 standard; peptide; 10 AA.

XX ABU64842;

DT 14-MAY-2003 (first entry)

DE Human NY-ESO-1 HLA binding motif #26.

XX Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;

KW serological identification of antigens by recombinant expression cloning;

KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;

|                        |   |
|------------------------|---|
| KW                     | lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;   |
| KM                     | autoimmune disorder; cancer marker; CTL; cytolytic T cell line;           |
| KW                     | human leukocyte antigen; HLA binding motif.                               |
| XX                     | Homo sapiens.   |
| OS                     |   |
| XX                     | US2002164665-A1.  |
| PN                     |   |
| PD                     | 07-NOV-2002.  |
| XX                     |   |
| PF                     | 17-DEC-2001; 2001US-00023182.   |
| XX                     |   |
| PR                     | 03-OCT-1996; 96US-00725182.   |
| PR                     | 15-SEP-1997; 97US-00937263.   |
| PR                     | 29-DEC-2000; 2000US-00751798.   |
| XX                     |   |
| PA                     | (STOC/) STOCKERT E.   |
| PA                     | (JAGE/) JAGER E.  |
| PA                     | (CHEN/) CHEN Y.   |
| PA                     | (SCAN/) SCANLAN M.  |
| PA                     | (ALEX/) ALEXANDER K.  |
| PA                     | (OLDL/) OLD L J.  |
| XX                     |   |
| PI                     | Stocker E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;               |
| XX                     |   |
| DR                     | WPI; 2003-298695/29.  |
| XX                     |   |
| PT                     | New antibody that binds to the cancer associated antigen NY-ESO-1, useful |
| PT                     | for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,        |
| PT                     | prostate, lung, ovarian, thyroid or bladder cancer, infections or         |
| PT                     | autoimmune disorders.   |
| PS                     |   |
| XX                     |   |
| XX                     | Example 13; Page 6; 18pp; English.  |
| CC                     | The invention relates to an isolated antibody or binding fragment of an   |
| CC                     | antibody, which binds with a protein that is encoded by an isolated       |
| CC                     | nucleic acid molecule the complementary sequence of which hybridises      |
| CC                     | under stringent conditions to a nucleic acid molecule comprising the      |
| CC                     | nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  |
| CC                     | AAB96656. Also included are a hybridoma cell line producing the novel     |
| CC                     | monoclonal antibody, screening for cancer in a sample (by contacting the  |
| CC                     | sample with the isolated antibody, and determining binding of the novel   |
| CC                     | antibody to a target as an indicator of cancer), determining antibodies   |
| CC                     | against a cancer-associated antigen in a sample, determining              |
| CC                     | regression/progression/onset of a cancerous condition (by monitoring a    |
| CC                     | sample from a patient with the cancerous condition from parameters such   |
| CC                     | as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  |
| CC                     | antibody that binds to it, where the amount of the parameter is           |
| CC                     | indicative of progression, regression or onset of cancerous conditions),  |
| CC                     | and treating a subject afflicted with a cancerous condition by            |
| CC                     | administering to the subject an antibody that specifically binds to NY-   |
| CC                     | ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified   |
| CC                     | as stimulating a CTL (cytolytic T cell line) identified by SEREX          |
| CC                     | (serological identification of antigens by recombinant expression         |
| CC                     | cloning) expressed on a cancerous cell associated with the cancerous      |
| CC                     | condition) where the antibody is coupled to an anticancer agent. The      |
| CC                     | antibody is useful for treating cancer, e.g. melanoma, hepatoma,          |
| CC                     | lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  |
| CC                     | infections or autoimmune disorders. The present sequence represents an    |
| CC                     | HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1 |
| XX                     |   |
| SQ                     | Sequence 10 AA:   |
| Alignment Scores:      |   |
| Pred. No.:             | 153 Length: 10  |
| Score:                 | 10.00 Matches: 10   |
| Percent Similarity:    | 100.00% Conservative: 0   |
| Best local Similarity: | 100.00% Mismatches: 0   |
| Query Match:           | 5.56% Indels: 0   |
| DB:                    | Gape: 0   |

297 GGGCGGAGAGCCGCTGTTCAGTTTAC 326  
+-----+  
Db 1 GlyProGluSerArgLeuIleuNdiIuHeThyr 10

RESULT 249

ID ABU64841 standard; peptide; 10 AA.  
ABU64841  
XX ABU64841;  
AC  
DT 14-MAY-2003 (first entry)  
DE Human NY-ESO-1 HLA binding motif #25.  
XX  
XX  
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;  
KV serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KM lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX US2002164665-A1.  
PN 07-NOV-2002.  
PD 17-DEC-2001; 2001US-00023182.  
PF 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
DR WPI; 2003-298695/29.

New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
prostate, lung, ovarian, thyroid or bladder cancer, infections or  
autoimmune disorders.

Example 13; Page 6; 18pp; English.

The invention relates to an isolated antibody or binding fragment of an  
antibody, which binds with a protein that is encoded by an isolated  
nucleic acid molecule the complementary sequence of which hybridises  
under stringent conditions to a nucleic acid molecule comprising the  
nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
ABX96656. Also included are a hybridoma cell line producing the novel  
monoclonal antibody, screening for cancer in a sample (by contacting the  
sample with the isolated antibody, and determining binding of the novel  
antibody to a target as an indicator of cancer), determining antibodies  
against a cancer-associated antigen in a sample, determining  
regression/progression/onset of a cancerous condition (by monitoring a  
sample from a patient with the cancerous condition from parameters such  
as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
antibody that binds to it, where the amount of the parameter is  
indicative of progression, regression or onset of cancerous conditions),  
and treating a subject afflicted with a cancerous condition by  
administering to the subject an antibody that specifically binds to NY-  
ESO-1 protein or to an ESO-1-derived peptide (e.g. a peptide identified  
as stimulating a CTL (cytolytic T cell line) identified by SEREX  
(serological identification of antigens by recombinant expression  
cloning) expressed on a cancerous cell associated with the cancerous  
condition) where the antibody is coupled to an anticancer agent. The

CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX  
SQ Sequence 10 AA;  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64845 (1-10)  
QY 312 CTGCTTGAGTCTTACTGCGCATGCGCTTTC 341  
Db 1 LeuLeuGIupheTYLeuAlaMetProPhe 10  
RESULT 250  
ABU64845  
ID ABU64845 standard; peptide; 10 AA.  
XX  
AC ABU64845;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #29.  
XX  
KW Human; antigen; NY-ESO-1; cancer; SREX; cytostatic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
XX  
DR WPI, 2003-298695/29.  
XX  
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
PT autoimmune disorders.  
XX  
PS Example 13; Page 6; 18pp; English.  
XX  
CC The invention relates to an isolated antibody or binding fragment of an  
CC antibody, which binds with a protein that is encoded by an isolated  
CC nucleic acid molecule the complementary sequence of which hybridises  
CC under stringent conditions to a nucleic acid molecule comprising the  
CC nucleotide 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as

CC ABX96656. Also included are a hybridoma cell line producing the novel  
CC monoclonal antibody, screening for cancer in a sample (by contacting the  
CC sample with the isolated antibody, and determining binding of the novel  
CC antibody to a target as an indicator of cancer), determining antibodies  
CC against a cancer-associated antigen in a sample, determining  
CC regression/progression/onset of a cancerous condition (by monitoring a  
CC sample from a patient with the cancerous condition from parameters such  
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SREX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX  
SQ Sequence 10 AA;  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64845 (1-10)  
QY 390 GCCCAGCGCTTCCGCGCAGGGTGCTT 419  
Db 1 AlaProPheLeuProValProGlyValLeu 10  
RESULT 251  
ABU64846  
ID ABU64846 standard; peptide; 10 AA.  
XX  
AC ABU64846;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #30.  
XX  
KW Human; antigen; NY-ESO-1; cancer; SREX; cytostatic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.



|   |   |               |         |            |              |         |
|---|---|---------------|---------|------------|--------------|---------|
| PI  | Stoeckert E,  | Jager E,      | Chen Y, | Scanlan M, | Alexander K, | Old LJ; |
| XX  |   |               |         |            |              |         |
| DR  | WPI; 2003-298695/29.  |               |         |            |              |         |
| XX  |   |               |         |            |              |         |
| PT  | New antibody that binds to the cancer associated antigen NY-ESO-1, useful |               |         |            |              |         |
| PT  | for treating cancer, e.g., melanoma, hepatoma, lymphoma, or breast,       |               |         |            |              |         |
| PT  | prostate, lung, ovarian, thyroid or bladder cancer, infections or         |               |         |            |              |         |
| PT  | autoimmune disorders.   |               |         |            |              |         |
| XX  |   |               |         |            |              |         |
| PS  | Example 13; Page 6; 18pp; English.  |               |         |            |              |         |
| XX  |   |               |         |            |              |         |
| CC  | The invention relates to an isolated antibody or binding fragment of an   |               |         |            |              |         |
| CC  | antibody, which binds with a protein that is encoded by an isolated       |               |         |            |              |         |
| CC  | nucleic acid molecule the complementary sequence of which hybridises      |               |         |            |              |         |
| CC  | under stringing conditions to a nucleic acid molecule comprising the      |               |         |            |              |         |
| CC  | nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  |               |         |            |              |         |
| CC  | ABX96656. Also included are a hybridoma cell line producing the novel     |               |         |            |              |         |
| CC  | monoclonal antibody, screening for cancer in a sample (by contacting the  |               |         |            |              |         |
| CC  | sample with the isolated antibody, and determining binding of the novel   |               |         |            |              |         |
| CC  | antibody to a target as an indicator of cancer), determining antibodies   |               |         |            |              |         |
| CC  | against a cancer-associated antigen in a sample, determining              |               |         |            |              |         |
| CC  | regression/progression/onset of a cancerous condition (by monitoring a    |               |         |            |              |         |
| CC  | sample from a patient with the cancerous condition from parameters such   |               |         |            |              |         |
| CC  | as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  |               |         |            |              |         |
| CC  | antibody that binds to it, where the amount of the parameter is           |               |         |            |              |         |
| CC  | indicative of progression, regression or onset of cancerous conditions),  |               |         |            |              |         |
| CC  | and treating a subject afflicted with a cancerous condition by            |               |         |            |              |         |
| CC  | administering to the subject an antibody that specifically binds to NY-   |               |         |            |              |         |
| CC  | ESO-1 protein or to an ESO-1 derived peptide (e.g., a peptide identified  |               |         |            |              |         |
| CC  | as stimulating a CTL (cytolytic T cell line) identified by SEREX          |               |         |            |              |         |
| CC  | (serological identification of antigens by recombinant expression         |               |         |            |              |         |
| CC  | cloning) expressed on a cancerous cell associated with the cancerous      |               |         |            |              |         |
| CC  | condition) where the antibody is coupled to an anticancer agent. The      |               |         |            |              |         |
| CC  | antibody is useful for treating cancer, e.g., melanoma, hepatoma,         |               |         |            |              |         |
| CC  | lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  |               |         |            |              |         |
| CC  | infections or autoimmune disorders. The present sequence represents an    |               |         |            |              |         |
| CC  | HMA (human leukocyte antigen) binding peptide derived from human NY-ESO-1 |               |         |            |              |         |
| XX  |   |               |         |            |              |         |
| SQ  | Sequence 10 AA:   |               |         |            |              |         |
| Alignment Scores:                         |   |               |         |            |              |         |
| Pred. No.:                                | 153   | Length:       | 10      |            |              |         |
| Score:                                    | 10.00   | Matches:      | 10      |            |              |         |
| Percent Similarity:                       | 100.00%   | Conservative: | 0       |            |              |         |
| Best Local Similarity:                    | 100.00%   | Mismatches:   | 0       |            |              |         |
| Query Match:                              | 5.56%   | Indels:       | 0       |            |              |         |
| DB:                                       | 1   | Gaps:         | 0       |            |              |         |
| US-10-023-182-1 (1-752) x ABU64846 (1-10) |   |               |         |            |              |         |
| OY  | 288 GGGGCCAGGGGCGCCGAGAGCCGCCTGCTT 317                                    |               |         |            |              |         |
| Dd  |   |               |         |            |              |         |
|   | 1 G A l a r g l y P r o g r e s r a r t i e n u e n  10                   |               |         |            |              |         |
| RESULT 252                                |   |               |         |            |              |         |
| ID  | ABU64844 standard; peptide; 10 AA.  |               |         |            |              |         |
| ABU64844                                  |   |               |         |            |              |         |
| AC  | ABU64844;   |               |         |            |              |         |
| XX  |   |               |         |            |              |         |
| DT  | 14-MAY-2003 (first entry)   |               |         |            |              |         |
| DE  | Human NY-ESO-1 HLA binding motif #28.                                     |               |         |            |              |         |
| XX  |   |               |         |            |              |         |
| KW  | Human; antigen; NY-ESO-1; cancer; SEREX; cytosolic; immunosuppressive;    |               |         |            |              |         |
| KW  | serological identification of antigens by recombinant expression cloning; |               |         |            |              |         |
| KW  | melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;             |               |         |            |              |         |
| KW  | lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;   |               |         |            |              |         |
| KW  | autoimmune disorder; cancer marker; CTL; cytolytic T cell line;           |               |         |            |              |         |
| KW  | human leukocyte antigen; HLA binding motif.                               |               |         |            |              |         |
| OS  | Homo sapiens.   |               |         |            |              |         |

```

PN. US2002164665-A1.
XX.
PD 07-NOV-2002. XX
PF 17-DEC-2001; 2001US-00023182. XX
PR 03-OCT-1996; 96US-00725182. XX
PR 15-SEP-1997; 97US-00937263. PR
PR 29-DEC-2000; 2000US-00751798. PR
PA (STOC/) STOCKERT E. PA
PA (JAGE/) JAGER E. PA
PA (CHEN/) CHEN Y. PA
PA (SCAN/) SCANLAN M. PA
PA (ALEX/) ALEXANDER K. PA
PA (OLDL/) OLD L J. PA
XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX WPI; 2003-298695/29. XX
XX
XX The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g., melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
XX Sequence 10 AA;
XX
Alignment Scores:
Pred. No.: 153 Length: 10
Score: 10.00 Matches: 10
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatched: 0
Query Match: 5.56% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ABU64844 (1-10)
CY 372 AGGAGCGTGGCCAGATGCCCCACCGCTT 401
DB 1 ArgSerLeuAlaGlnAspAlaProPheUeu 10
RESULT 253

```

ABU64850  
 ID ABU64850 standard; peptide; 10 AA.  
 AC ABU64850;  
 XX  
 DT 14-MAY-2003 (first entry)  
 XX  
 DE Human NY-ESO-1 HLA binding motif #34.  
 XX  
 KW Human; antigen: NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;  
 KW serological identification of antigens by recombinant expression cloning;  
 KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;  
 KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; cancer;  
 KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
 KW human leukocyte antigen; HLA binding motif.  
 XX  
 OS Homo sapiens.  
 XX  
 PN US2002164665-A1.  
 XX  
 PD 07-NOV-2002.  
 XX  
 PF 17-DEC-2001; 2001US-00023182.  
 XX  
 PR 03-OCT-1996; 96US-00725182.  
 XX  
 PR 15-SEP-1997; 97US-00937263.  
 XX  
 PR 29-DEC-2000; 2000US-00751798.  
 XX  
 PA (STOC/) STOCKERT E.  
 PA (JAGE/) JAGER E.  
 PA (CHEN/) CHEN Y.  
 PA (SCAN/) SCANLAN M.  
 PA (ALEX/) ALEXANDER K.  
 PA (OLDL/) OLD L J.  
 XX  
 PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
 XX  
 DR WPI; 2003-298695/29.  
 XX  
 PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
 PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
 PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
 PT autoimmune disorders.  
 XX  
 PS Example 13; Page 7; 18pp; English.  
 XX  
 CC The invention relates to an isolated antibody or binding fragment of an  
 CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridises  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleosides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC infections or autoimmune disorders. The present sequence represents an  
 CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1

SEQ Sequence 10 AA;  
 Alignment Scores:  
 Pred. No.: 153 Length: 10  
 Score: 10.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x ABU64850 (1-10)  
 QY 465 ACTGCTGACGACCAACCGCAACTGCAGTC 494  
 DB 1 ThrAlaAlaAspHisArgGlnLeuGlnLeu 10  
 RESULT 254  
 ADC09161  
 ID ADC09161 standard; peptide; 10 AA.  
 XX  
 AC ADC09161;  
 XX  
 DT 18-DEC-2003 (first entry)  
 XX  
 DE Epitope with high affinity for MHC class I #SEQ ID 186.  
 XX  
 DE Epitope; immunological; vaccine;  
 KW major histocompatibility complex class I; MHC class I; cancer;  
 KW immunisation.  
 XX  
 OS Unidentified.  
 XX  
 PN WO2003008537-A2.  
 XX  
 PD 30-JAN-2003.  
 XX  
 PF 29-MAR-2002; 2002WO-US010189.  
 XX  
 PR 06-APR-2001; 2001US-0282211P.  
 XX  
 PR 07-NOV-2001; 2001US-0337017P.  
 XX  
 PR 07-MAR-2002; 2002US-0363210P.  
 XX  
 PA (CTLI-) CTLI IMUNOTHERAPIES CORP.  
 XX  
 PI Simard JTL, Diamond DC, Liu L, Xie Z;  
 XX  
 DR WPI; 2003-248010/24.  
 XX  
 PT Epitope having high affinity for major histocompatibility complex class I  
 PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
 PT therapeutic composition and for diagnosing a disease.  
 XX  
 PS Claim 1; SEQ ID NO 186; 239pp; English.  
 XX  
 CC The invention relates to an isolated epitope polypeptide that has high  
 CC affinity for major histocompatibility complex (MHC) class I, and an  
 CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
 CC or immunotherapeutic composition containing an epitope of the invention.  
 CC Compositions of the invention may be used in the treatment of cancer. The  
 CC method can be combined with a radiation therapy, chemotherapy,  
 CC biochemotherapy or surgery. The composition is also useful for evaluating  
 CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
 CC -peptide complexes of the invention are useful for determining specific T  
 CC cell frequency. This method is useful for evaluating immunological  
 CC response, by performing the method prior to and subsequent to an  
 CC immunisation step. Compositions of the invention are useful for  
 CC diagnosing a disease. The current sequence represents an epitope of the  
 CC invention with high affinity for MHC class I.  
 XX  
 SQ Sequence 10 AA;  
 Alignment Scores:  
 Pred. No.: 153 Length: 10

Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09161 (1-10)

QY 429 TTCACTGTCGGCAACATCTGACTATC 458  
DB 1 PheThrValSerGlyAsnLeuLeuThrIle 10

RESULT 255  
ADC09150  
ID ADC09150 standard; peptide: 10 AA.  
AC ADC09150;  
XX  
XX  
XX 18-DEC-2003 (first entry)  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 175.  
DE  
XX Epitope; immunological; vaccine;  
KM major histocompatibility complex class I; MHC class I; cancer;  
KM immunisation.  
XX  
XX Unidentified.  
OS  
XX WO2003008537-A2.  
PN  
XX 30-JAN-2003.  
PD  
XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337011P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
XX Simard JUL, Diamond DC, Liu L, Xie Z;  
PI  
XX WPI; 2003-248010/24.  
DR  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
XX  
PS Claim 1; SEQ ID NO 175; 239pp; English.

CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC bichemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
XX Sequence 10 AA;

Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0

DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09150 (1-10)

QY 312 CTGCTGAGTTTCTACCTCGCCATGCTTTTC 341  
DB 1 LeuLeuGluIuPheTyrluAlaIaMetProPhe 10

RESULT 256  
ADC09176  
ID ADC09176 standard; peptide: 10 AA.  
AC ADC09176;  
XX  
XX  
XX 18-DEC-2003 (first entry)  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 201.  
DE  
XX Epitope; immunological; vaccine;  
KM major histocompatibility complex class I; MHC class I; cancer;  
KM immunisation.  
XX  
XX Unidentified.  
OS  
XX WO2003008537-A2.  
PN  
XX 30-JAN-2003.  
PD  
XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337011P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
XX Simard JUL, Diamond DC, Liu L, Xie Z;  
PI  
XX WPI; 2003-248010/24.  
DR  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
XX  
PS Claim 1; SEQ ID NO 201; 239pp; English.

CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC bichemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
XX Sequence 10 AA;

Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09176 (1-10)

OY 501 AGCTCTGTCTCCAGCAGCTTCCCTGTG 530  
| | | | | | | | | | | | | | | | | |  
DB 1 SerSerCylLeuGlnGlnLeuSerLeu 10  
| | | | | | | | | | | | | | | | | |  
RESULT 257  
ADC09151  
ID ADC09151 standard; peptide; 10 AA.  
XX  
XX  
AC ADC09151;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 176.  
XX  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-248010/24.  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 176; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09151 (1-10)  
OY 330 GCCATGCTTTCGCGACACCCATGGAAGCA 359  
| | | | | | | | | | | | | | | | | |  
DB 1 AlawetProphetaIsthrPrometClnala 10  
| | | | | | | | | | | | | | | | | |  
XX

RESULT 258  
ADC09163  
ID ADC09163 standard; peptide; 10 AA.  
XX  
XX  
AC ADC09163;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 188.  
XX  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-248010/24.  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 188; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09163 (1-10)  
OY 414 GTGCTTGTGAAGAGCTTACCTGTCTCCGCC 443  
| | | | | | | | | | | | | | | | | |  
DB 1 ValLeuLeuYsGluPheThValSerCly 10  
| | | | | | | | | | | | | | | | | |  
RESULT 259  
ADC09170  
ID ADC09170 standard; peptide; 10 AA.  
XX

AC ADC09170;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 195.  
XX  
XX Epitope; immunological; vaccine;  
KM major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX WO2003008537-A2.  
XX  
XX 30-JAN-2003.  
XX  
XX 29-MAR-2002; 2002WO-US010189.  
XX  
XX 06-APR-2001; 2001US-028221P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX  
DR Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 195; 239pp; English.  
XX  
XX The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biocochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
XX  
XX Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09170 (1-10)  
OY 465 ACTGCTGACAGACACCGCCCACTGACGCTC 494  
ID ||||||||||||||||||||||||||||  
ADCO9332 1 ThrAlaAlaephHisArgGlnueGlnIleu 10  
XX  
XX RESULT 260  
ID ADC09332 standard; peptide; 10 AA.  
XX  
XX ADC09332;  
XX  
XX 18-DEC-2003 (first entry)  
XX

DE Epitope with high affinity for MHC class I #SEQ ID 357.  
XX  
XX Epitope; immunological; vaccine;  
KM major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.  
XX WO2003008537-A2.  
XX  
XX 30-JAN-2003.  
XX  
XX 29-MAR-2002; 2002WO-US010189.  
XX  
XX 06-APR-2001; 2001US-028221P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX  
DR Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 357; 239pp; English.  
XX  
XX The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biocochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
XX  
XX Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09332 (1-10)  
OY 240 GGTCCGATGCGCGCGCGCTTCAGGCGCTG 269  
ID ||||||||||||||||||||||||||||  
ADCO9146 1 GlyProHisGlyGlyAlaAlaSerGlyLeu 10  
XX  
XX ADC09146;  
XX  
XX 18-DEC-2003 (first entry)  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 171.  
XX  
XX Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
XX

KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JLL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-248010/24.  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 171; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09146 (1-10)  
QY 297 GGGCGGAGCGCGCTGTGAGTTCTAC 326  
DB 1 GlyProGluSerArgLeuLeuGluInuPheTy 10  
RESULT 262  
ADC09154  
ID ADC09154 standard; peptide; 10 AA.  
XX  
AC ADC09154;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 179.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
XX immunisation.  
OS Unidentified.  
XX

PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JLL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-248010/24.  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 179; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09154 (1-10)  
QY 393 CCACCGCTTCCGTCGCGAGGGGTCTCTG 422  
DB 1 ProProLeuProValProGlyValLeuLeu 10  
RESULT 263  
ADC09156  
ID ADC09156 standard; peptide; 10 AA.  
XX  
AC ADC09156;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 181.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
XX immunisation.  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX

PF 29-MAR-2002; 2002WO-US010189.  
XX  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JUL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 181; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC bi chemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC -peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09156 (1-10)  
QY 360 GAGCTGGCCCCAGAGAGCTGCCCCAGAT 389  
DB 1 GlnleuAlaArgArgSerleuAlaGlnasp 10  
RESULT 264  
ADC09178  
ID ADC09178 standard; peptide; 10 AA.  
XX  
XX ADC09178;  
XX  
XX 18-DEC-2003 (first entry)  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 203.  
XX  
XX Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.  
OS  
XX  
XX WO2003008537-A2.  
XX  
XX 30-JAN-2003.  
XX  
XX 29-MAR-2002; 2002WO-US010189.  
XX  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-NOV-2001; 2001US-0337017P.

PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JUL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 203; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC bi chemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC -peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09178 (1-10)  
QY 537 ATCAGCAGGCTTCTGCCCCGTTTGTG 566  
DB 1 IleThrGlnCysPheleuProvalPheleu 10  
RESULT 265  
ADC09169  
ID ADC09169 standard; peptide; 10 AA.  
XX  
XX ADC09169;  
XX  
XX 18-DEC-2003 (first entry)  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 194.  
XX  
XX Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.  
OS  
XX  
XX WO2003008537-A2.  
XX  
XX 30-JAN-2003.  
XX  
XX 29-MAR-2002; 2002WO-US010189.  
XX  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTL1-) CTL IMMUNOTHERAPIES CORP.

PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 194; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09169 (1-10)  
OY 492 CTCCTCATCAGCTCTGTCTCCAGCAGCTT 521  
ID |||||  
DB 1 LeuserlleserSercYsleuglndleu 10  
XX  
RESULT 266  
ADC09166  
ID ADC09166 standard; peptide; 10 AA.  
XX  
AC ADC09166;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 191.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX

PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 191; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 10 AA;  
XX  
Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09166 (1-10)  
OY 402 CCCGTGCCAGGGGTCTTGAAGAGTTC 431  
ID |||||  
DB 1 ProValProGlyValLeuLeuGlyIuphe 10  
XX  
RESULT 267  
ADC09333  
ID ADC09333 standard; peptide; 10 AA.  
XX  
AC ADC09333;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 358.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX



PS Claim 1; SEQ ID NO 358; 239pp; English.

XX The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or a vaccine. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.

XX  
SQ Sequence 10 AA;

Alignment Scores:  
Pred. No.: 153 Length: 10  
Score: 10.00 Matches: 10  
Percent Similarity: 100.00% Conservativity: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.56% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09333 (1-10)

Qy 231 GCCCGCGGGGTCGCCGATGCGCGCGCGCT 260  
Db 1 A1AProArgG1YProHisG1yG1yAlaAla 10

RESULT 268  
ADC09158  
ID ADC09158 standard; peptide; 10 AA.  
XX  
AC ADC09158;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 183.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
DR  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 183; 239pp; English.

The invention relates to an isolated epitope polypeptide that has high  
affinity for major histocompatibility complex (MHC) class I, and an  
epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
or immunotherapeutic composition containing an epitope of the invention.  
Compositions of the invention may be used in the treatment of cancer. The  
method can be combined with a radiation therapy, chemotherapy,  
biochemotherapy or a vaccine. The composition is also useful for evaluating  
immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
peptide complexes of the invention are useful for determining specific T  
cell frequency. This method is useful for evaluating immunological  
response, by performing the method prior to and subsequent to an  
immunisation step. Compositions of the invention are useful for  
diagnosing a disease. The current sequence represents an epitope of the  
invention with high affinity for MHC class I.

|  |   |
|--|---|
| CC   | epitope cluster comprising the polypeptide. Also disclosed is a vaccine or immunotherapeutic composition containing an epitope of the invention.  |
| CC   | Compositions of the invention may be used in the treatment of cancer. The method can be combined with a radiation therapy, chemotherapy, biochemotherapy or surgery. The composition is also useful for evaluating immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC-peptide complexes of the invention are useful for determining specific T cell frequency. This method is useful for evaluating immunological response, by performing the method prior to and subsequent to an immunisation step. Compositions of the invention are useful for diagnosing a disease. The current sequence represents an epitope of the invention with high affinity for MHC class I. |
| CC   |   |
| XX   |   |
| SQ   | Sequence 10 AA;   |
| Alignment Scores:  |   |
| Pred. No.:   | 153 Length: 10  |
| Score:   | 10.00 Matches: 10   |
| Percent Similarity:  | 100.00% Conservative: 0   |
| Best Local Similarity:   | 100.00% Mismatches: 0   |
| Query Match:   | 5.56% Indels: 0   |
| DB:  | Gaps: 0   |
| US-10-023-182-1 (1-752) x ADC09158 (1-10)  |   |
| QY   | 402 CCGGTGCCAGGGGTCCTTGAAAGAGTTTC 431<br>   |
| Dd   | 1 ProValProGlyValLeuLeuLysIubhe 10<br>  |
| RESULT 269   |   |
| ID   | ADDJ35567 standard; peptide; 10 AA.   |
| AC   | ADDJ35567;  |
| DT   | 15-JAN-2004 (first entry)   |
| DE   | Human NY-ESO-1 peptide SEQ ID NO:17.  |
| KW   | human leukocyte antigen; HLA; cytolytic T cell stimulator; immune response; cytotstatic; gene therapy; human; NY-ESO-1; immunogenic tumour antigen.   |
| OS   | Homo sapiens.   |
| PN   | WO2003068800-A2.  |
| PD   | 21-AUG-2003.  |
| PF   | 12-FEB-2003; 2003WO-US004182.   |
| PR   | 13-FEB-2002; 2002US-0355828P.   |
| PA   | (LUDW-) LUDWIG INST CANCER RES.   |
| PI   | Jager B, Knuth A, Old L, Ganjaic S;   |
| WP   | WI: 2003-902684/82.   |
| PT   | New isolated peptide that binds to an HLA molecule, useful for treating a subject with a disorder characterized by the presence of complexes of an HLA molecule and the peptide, e.g. cancer, and for inducing immune response.   |
| Example 9; SEQ ID NO 17; 73pp; English.  |   |
| The present invention describes an isolated peptide (I) consisting of 8-   |   |
| 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for |   |
| complexes of the peptide and the HLA molecule, where at least 8  |   |
| contiguous amino acids of the peptide consist of at least 8 contiguous   |   |
| amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also  |   |
| described: (1) a composition comprising (I) and a carrier; (2) an  |   |

CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an  
 CC expression vector comprising the nucleic acid of (2) in operable linkage  
 CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
 CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
 CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
 CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
 CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
 CC isolated tetramer comprising the HLA molecule, biotin and a binding  
 CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
 CC inducing an immune response in a subject; (12) treating a subject with a  
 CC disorder characterised by the presence of complexes of an HLA molecule  
 CC and the peptide; (13) a combinatorial library of derivatives of (1),  
 CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
 CC for an analogue of (1); (15) an isolated antibody or its fragment that  
 CC specifically binds a HLA/peptide complex, or (1); (16) an isolated  
 CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
 CC and (17) inducing an immune response on a subject having a disorder  
 CC characterised by the presence of the HLA molecule and the peptide. (1)  
 CC has cytostatic activity, and can be used in gene therapy. The peptides,  
 CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
 CC useful for treating a subject with a disorder characterised by the  
 CC presence of complexes of an HLA molecule and the peptide, and for  
 CC inducing an immune response. The present sequence represents a human NY-  
 CC ESO-1 peptide, which is used in the exemplification of the present  
 CC invention. NY-ESO-1 is an immunogenic tumour antigen.

CC Sequence 10 AA;

SQ Alignment Scores:

Pred. No.: 153 Length: 10  
 Score: 100.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADD35567 (1-10)

OY 330 GCCATGCTTTCGCGACACCCATGAGACA 359  
 DB 1 AlalMetProPheAlaThrProMetGluAla 10

RESULT 270

ADD35562 ID ADD35562 standard; peptide; 10 AA.

AC ADD35562;

DT 15-JAN-2004 (first entry)

XX Human NY-ESO-1 peptide SEQ ID NO:12.

XX human leukocyte antigen; HLA; cytolytic T cell stimulator;

KW immune response; cytostatic; gene therapy; human; NY-ESO-1;

KM immunogenic tumour antigen.

OS Homo sapiens.

PN WO2003068800-A2.

PD 21-AUG-2003.

PF 12-FEB-2003; 2003WO-US004182.

PR 13-FEB-2002; 2002US-0355828P.

RA (LUDM-) LUDWIG INST CANCER RES.

PI Jager E, Knuth A, Old L, Gnjatic S;

DR WPI, 2003-902684/82.

XX New isolated peptide that binds to an HLA molecule, useful for treating a

PT subject with a disorder characterized by the presence of complexes of an  
 PT HLA molecule and the peptide, e.g. cancer, and for inducing immune  
 PT response.

XX Example 1; SEQ ID NO 12; 73pp; English.

XX The present invention describes an isolated peptide (1) consisting of 8-  
 CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A1, HLA-  
 CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for  
 CC complexes of the peptide and the HLA molecule, where at least 8  
 CC contiguous amino acids of the peptide consist of at least 8 contiguous  
 CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also  
 CC described: (1) a composition comprising (1) and a carrier; (2) an  
 CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an  
 CC expression vector comprising the nucleic acid of (2) in operable linkage  
 CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
 CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
 CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
 CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
 CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
 CC isolated tetramer comprising the HLA molecule, biotin and a binding  
 CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
 CC inducing an immune response in a subject; (12) treating a subject with a  
 CC disorder characterised by the presence of complexes of an HLA molecule  
 CC and the peptide; (13) a combinatorial library of derivatives of (1),  
 CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
 CC for an analogue of (1); (15) an isolated antibody or its fragment that  
 CC specifically binds a HLA/peptide complex, or (1); (16) an isolated  
 CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
 CC and (17) inducing an immune response on a subject having a disorder  
 CC characterised by the presence of the HLA molecule and the peptide. (1)  
 CC has cytostatic activity, and can be used in gene therapy. The peptides,  
 CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
 CC useful for treating a subject with a disorder characterised by the  
 CC presence of complexes of an HLA molecule and the peptide, and for  
 CC inducing an immune response. The present sequence represents a human NY-  
 CC ESO-1 peptide, which is used in the exemplification of the present  
 CC invention. NY-ESO-1 is an immunogenic tumour antigen.

SQ Sequence 10 AA;

Alignment Scores:  
 Pred. No.: 153 Length: 10  
 Score: 100.00 Matches: 10  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.56% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADD35562 (1-10)

OY 342 GCGACACCCATGAGAGAGCTGAGCCGC 371  
 DB 1 AlalThrProMetGluAlaGluDeuAlaArg 10

RESULT 271

AAU85106 ID AAU85106 standard; peptide; 30 AA.

AC AAU85106;

DT 08-MAY-2002 (first entry)

DE Human NYNSOLA segment 5.

XX Saviere; vaccine; cancer; viral infection; HIV; hepatitis C virus;

KW viral infection; human immunodeficiency virus; melanoma;

KM bacterial infection; Salmonella; Legionella; parasitic infection;

OS Trypanosoma; Toxoplasma; Giardia.

XX Homo sapiens.

PN WO200190197-A1.

```
XX 29-NOV-2001.
PD 25-MAY-2001; 2001WO-AU000622.
PF 26-MAY-2000; 2000AU-00007761.
PR (AUSU ) UNIV AUSTRALIAN NAT.
PA
XX Thomson SA, Ramshaw IA;
PI
XX WPI; 2002-147575/19.
DR N-PSDB; ABK36926.
XX
PT New synthetic polypeptides having several different segments of at least
PT one parent polypeptide linked together differently compared to the
PT linkage in the parent polypeptide, for inducing immune response against a
PT pathogen or cancer.
XX
PS Example 3; Fig 27; 364pp; English.
XX
CC The invention relates to a new synthetic polypeptide (I) comprising
CC several different segments of at least one parent polypeptide linked
CC together in a different relationship relative to their linkage in the
CC parent polypeptide to impede, abrogate or otherwise alter at least one
CC function associated with the parent polypeptide and for inducing an
CC immune response against a pathogen or cancer. Also included are a
CC synthetic polynucleotide encoding and a computer system for designing the
CC synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC are referred to as a Savine. The synthetic polypeptide is useful for
CC modulating immune responses preferably directed against a pathogen or a
CC cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC oesophagus, brain, testicle, uterus), as potentiating agents.
CC Compositions comprising the polypeptide may be used in the treatment or
CC prophylaxis against viral (such as infections caused by HIV (human
CC immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC a peptide derived from a parent protein used to construct a savine of the
CC invention
XX
SQ Sequence 30 AA;
SQ
Alignment Scores:
Pred. No.: 226 Length: 30
Score: 10.00 Matches: 10
Percent Similarity: 33.33% Conservative: 0
Best Local Similarity: 33.33% Mismatches: 20
Query Match: 5.62% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAU85106 (1-30)
QY 394 GGGGATCTCTGGGCGGAGGCTCTGCGGCGGAGCTCTGCTTCATGGGTGTGCGGAAGGC 335
DB 1 G|Y|A|P|O|A|T|G|G|Y|P|H|I|S|G|Y|G|Y|A|A|A|S|E|T|G|Y|L|E|U|A|N|G|Y|C|Y|S|A|T|G|C|Y|S 20
QY 334 ATGGCGAGCTAGAACTCAAGCAGGCGGCTC 305
DB 21 G|Y|A|A|A|T|G|G|Y|P|H|I|S|E|T|G|Y|L|E|U|A|N|G|Y|C|Y|S|A|T|G|C|Y|S 30
RESULT 272
AAU85107
ID AAU85107 standard; peptide; 30 AA.
XX
XX AAU85107;
XX AC
XX 08-MAY-2002 (first entry)
XX
XX
```

```
DE Human NYNSOLA segment 6.
XX
XX Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
XX viral infection; human immunodeficiency virus; melanoma;
XX bacterial infection; Salmonella; Legionella; parasitic infection;
XX Trypanosoma; Toxoplasma; Giardia.
XX
XX Homo sapiens.
XX
XX WO200190197-A1.
XX
XX 29-NOV-2001.
XX
XX 25-MAY-2001; 2001WO-AU000622.
XX
XX 26-MAY-2000; 2000AU-00007761.
XX
XX (AUSU ) UNIV AUSTRALIAN NAT.
XX
XX Thomson SA, Ramshaw IA;
XX
XX WPI; 2002-147575/19.
XX
XX N-PSDB; ABK36927.
XX
XX
XX New synthetic polypeptides having several different segments of at least
XX one parent polypeptide linked together differently compared to the
XX linkage in the parent polypeptide, for inducing immune response against a
XX pathogen or cancer.
XX
PS Example 3; Fig 27; 364pp; English.
XX
CC The invention relates to a new synthetic polypeptide (I) comprising
CC several different segments of at least one parent polypeptide linked
CC together in a different relationship relative to their linkage in the
CC parent polypeptide to impede, abrogate or otherwise alter at least one
CC function associated with the parent polypeptide and for inducing an
CC immune response against a pathogen or cancer. Also included are a
CC synthetic polynucleotide encoding and a computer system for designing the
CC synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC are referred to as a Savine. The synthetic polypeptide is useful for
CC modulating immune responses preferably directed against a pathogen or a
CC cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC oesophagus, brain, testicle, uterus), as potentiating agents.
CC Compositions comprising the polypeptide may be used in the treatment or
CC prophylaxis against viral (such as infections caused by HIV (human
CC immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC a peptide derived from a parent protein used to construct a savine of the
CC invention
XX
SQ Sequence 30 AA;
SQ
Alignment Scores:
Pred. No.: 226 Length: 30
Score: 10.00 Matches: 10
Percent Similarity: 33.33% Conservative: 0
Best Local Similarity: 33.33% Mismatches: 20
Query Match: 5.62% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAU85107 (1-30)
QY 349 GGTGTCGGAAGGAGGAGGTAGAACTCAAGCAGGCGGCTCTCCGGGCCCCCTGACC 290
DB 1 G|Y|C|Y|S|A|T|G|C|Y|S|G|Y|A|A|A|T|G|G|Y|P|H|I|S|E|T|G|Y|L|E|U|A|N|G|Y|C|Y|S|A|T|G|C|Y|S 20
QY 289 CCGATCTGAGCATTCGATTCAGCCCTGAA 260
XX
XX
```

Db 21 MetProphea1aThrProMetGluAlaGlu 30

RESULT 273

ADD35566 standard; peptide; 30 AA.

AC ADD35566;

DT 15-JAN-2004 (first entry)

DE Human NY-ESO-1 peptide SEQ ID NO:16.

KM human leukocyte antigen; HLA; cytolytic T cell stimulator;

KW immune response; cytostatic; gene therapy; human; NY-ESO-1;

XX immunogenic tumour antigen.

OS Homo sapiens.

FN WO2003068800-A2.

PD 21-AUG-2003.

PE 12-FEB-2003; 2003WO-US004182.

PR 13-FEB-2002; 2002US-0355828P.

PA (LUDW-) LUDWIG INST CANCER RES.

PI Jager E, Knuth A, Old L, Gnjatic S;

XX WPI; 2003-902684/82.

XX

PT New isolated peptide that binds to an HLA molecule, useful for treating a

PT subject with a disorder characterized by the presence of complexes of an

PT HLA molecule and the peptide, e.g. cancer, and for inducing immune

PT response.

PS Example 9; SEQ ID NO 16; 73pp; English.

XX

XX The present invention describes an isolated peptide (1) consisting of 8-

CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-

CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for

CC complexes of the peptide and the HLA molecule, where at least 8

CC contiguous amino acids of the peptide consist of at least 8 contiguous

CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also

CC described: (1) a composition comprising (1) and a carrier; (2) an

CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an

CC expression vector comprising the nucleic acid of (2) in operable linkage

CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)

CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)

CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL

CC of (5); (7) a polypeptide comprising at least two of (1) that are linked

CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an

CC isolated tetramer comprising the HLA molecule, biotin and a binding

CC partner; (10) a composition comprising the tetramer and a carrier; (11)

CC inducing an immune response in a subject; (12) treating a subject with a

CC disorder characterized by the presence of complexes of an HLA molecule

CC and the peptide; (13) a combinatorial library of derivatives of (1),

CC where the derivatives consist of 8-11 amino acids; (14) a screening assay

CC for an analogue of (1); (15) an isolated antibody or its fragment that

CC specifically binds a HLA/peptide complex, or (1); (16) an isolated

CC soluble T cell receptor that specifically binds to a HLA/peptide complex;

CC and (17) inducing an immune response on a subject having a disorder

CC characterized by the presence of the HLA molecule and the peptide. (1)

CC has cytostatic activity, and can be used in gene therapy. The peptides,

CC nucleic acid molecules, vectors, compositions, antibodies and methods are

CC useful for treating a subject with a disorder characterized by the

CC presence of complexes of an HLA molecule and the peptide, and for

CC inducing an immune response. The present sequence represents a human NY-

CC ESO-1 peptide, which is used in the exemplification of the present

CC invention. NY-ESO-1 is an immunogenic tumour antigen.

XX

XX Sequence 30 AA;

SEQ

Alignment Scores:

Pred. No.: 226 Length: 30

Score: 10.00 Matches: 10

Percent Similarity: 38.46% Conservative: 0

Best Local Similarity: 38.46% Mismatches: 16

Query Match: 5.62% Indels: 0

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADD35566 (1-30)

QY 331 CGGAGGTRGAACCTCAAGCAGCGGCTCTCGGCGCCCTGGCGCCGCATCTGCAGCATCCA 272

Db 1 AlaArgGlyProGluSerArgLeuGluPheTyrLeuAlaMetProphea1aThrPro 20

QY 271 TTCAGCCCTGAAGCCGCG 254

Db 21 MetGluAlaGluLeuAla 26

RESULT 274

AAM62586

ID AAM62586 standard; peptide; 9 AA.

XX

AC AAM62586;

DT 17-SEP-1998 (first entry)

DE Cancer associated antigen peptide.

XX

KM Cancer associated antigen; NY-ESO-1; regression; progression; onset;

KW cancer; treatment; diagnosis.

XX

OS Synthetic.

OS Homo sapiens.

XX

PN WO9814464-A1.

XX

PD 09-APR-1998.

XX

PF 15-SEP-1997; 97WO-US016335.

XX

PR 03-OCT-1996; 96US-00725182.

XX

PA (LUDW-) LUDWIG INST CANCER RES.

PI Chen Y, Scanlan M, Gure A, Old LJ, Jager E, Knuth A;

PI Drifffhout JW;

XX WPI; 1998-286417/25.

DR

XX

PT New isolated cancer associated antigen - is used to develop products for

PT the diagnosis and treatment of cancers and for monitoring cancer therapy.

XX

PS Claim 33; Page 17; 49pp; English.

XX

XX Peptides AAM62585-87 are derived from cancer associated antigen NY-ESO-1,

CC and are stimulators of cytotoxic T-cells. The specification describes a

CC method for determining regression, progression of onset of a cancerous

CC condition, comprising monitoring a sample from a patient with the

CC cancerous condition for a parameter selected from NY-ESO-1 protein, a

CC peptide derived from NY-ESO-1 protein and cytolytic T cells specific for

CC the peptide and an MHC molecule with which it non-covalently complexes.

CC Methods for the treatment of a cancerous condition are also described.

CC The NY-ESO-1 protein and peptides derived from it can be used for

CC diagnosis and treatment of cancers and to monitor the efficacy of a

CC therapeutic regime

XX

XX Sequence 9 AA;

SEQ

Alignment Scores:

Pred. No.: 816 Length: 9

Score: 9.00 Matches: 9

Percent Similarity: 100.00% Conservative: 0

```
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAW62586 (1-9)

QY 522 TCCCTGTGATGATCAGCAGTGC 548
DB 1 SerleuNeuMetTpIleThrGlnCys 9

RESULT 275
AAW62587
ID AAW62587 standard; peptide; 9 AA.
XX
AC AAW62587;
XX
DT 17-SEP-1998 (first entry)
XX
DE Cancer associated antigen peptide.
XX
KW Cancer associated antigen; NY-ESO-1; regression; progression; onset;
  cancer; treatment; diagnosis.
XX
OS Synthetic.
XX
OS Homo sapiens.
XX
PN WO9814464-A1.
XX
PD 09-APR-1998.
XX
PF 15-SEP-1997; 97WO-US016335.
XX
PR 03-OCT-1996; 96US-00725182.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Chen Y, Scanlan M, Gure A, Old LJ, Jager E, Knuth A;
PI Drifflout JM;
XX
DR WPI; 1998-286417/25.
XX
PT New isolated cancer associated antigen - is used to develop products for
  the diagnosis and treatment of cancers and for monitoring cancer therapy.
XX
PS Claim 33; Page 17; 49pp; English.
XX
CC Peptides AAW62585-87 are derived from cancer associated antigen NY-ESO-1,
  and are stimulators of cytotoxic T-cells. The specification describes a
  method for determining regression, progression of onset of a cancerous
  condition, comprising monitoring a sample from a patient with the
  cancerous condition for a parameter selected from NY-ESO-1 protein, a
  peptide derived from NY-ESO-1 protein and cytolytic T cells specific for
  the peptide and an MHC molecule with which it non-covalently complexes.
  Methods for the treatment of a cancerous condition are also described.
  CC The NY-ESO-1 protein and peptides derived from it can be used for
  CC diagnosis and treatment of cancers and to monitor the efficacy of a
  CC therapeutic regime
XX
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAW62587 (1-9)

QY 516 CAGCTTCCCTGTGATGATGATGAG 542
DB 1 GlnleuSerleuNeuMetTpIleThr 9
```

```
RESULT 276
AAV06031
ID AAV06031 standard; peptide; 9 AA.
XX
AC AAV06031;
XX
DT 16-AUG-1999 (first entry)
XX
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
  leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
  metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
  uterine cancer; breast cancer; prostate cancer; ovarian cancer;
  cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
  liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
  vaccine; human leukocyte antigen; HLA.
XX
OS Homo sapiens.
XX
PN WO9918206-A2.
XX
PD 15-APR-1999.
XX
PF 21-SEP-1998; 98WO-US019609.
XX
PR 08-OCT-1997; 97US-0061428P.
XX
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI Wang RF, Rosenberg SA;
XX
DR WPI; 1999-277270/23.
XX
PT Cancer antigen NY ESO1/CAG-3.
XX
PS Example 10; Page 43; 88pp; English.
XX
CC This peptide was identified as an HLA peptide motif following a screen
  for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
  CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present
  CC peptide (ranked 14) corresponds to amino acid residues 153-160 of CAG-1
  CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
  CC eliciting an antigen specific immune response by T cells. Cancer peptides
  CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
  CC variants, are useful as cancer vaccines. A claimed method of preventing
  CC or inhibiting cancer involves administering a cancer peptide, with or
  CC without an HLA molecule. The cancer peptides form part of, or are derived
  CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
  CC sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical
  CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
  CC prostate, ovarian, pancreatic and thyroid cancers
XX
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAY06031 (1-9)

QY 510 CTCACAGAGCTTCCCTGTGATGAG 536
DB 1 LeuGlnIleuSerleuNeuMetTpI 9

RESULT 277
AAV06030
ID AAV06030 standard; peptide; 9 AA.
```

|  |   |
|--|---|
| XX                                       | AAV06030;   |
| AC                                       |   |
| XX                                       |   |
| DT                                       | 16-AUG-1999 (first entry)   |
| XX                                       |   |
| DE                                       | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |
| XX                                       |   |
| KW                                       | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |
| KM                                       | leukaemia; non-Hodgkins Lymphoma; Hodgkins Lymphoma; lung cancer;         |
| KM                                       | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KM                                       | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KM                                       | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KM                                       | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |
| XX                                       | vaccine; human leukocyte antigen; HLA.                                    |
| OS                                       | Homo sapiens.   |
| XX                                       |   |
| FN                                       | W09918206-A2.   |
| XX                                       |   |
| PD                                       | 15-APR-1999.  |
| XX                                       |   |
| PE                                       | 21-SEP-1998; 98WO-US019609.   |
| XX                                       |   |
| PR                                       | 08-OCT-1997; 97US-0061428P.   |
| XX                                       |   |
| PA                                       | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| PI                                       | Wang RF, Rosenberg SA;  |
| DR                                       | WPI; 1999-277270/23.  |
| XX                                       |   |
| FT                                       | Cancer antigen NY ESO1/CAG-3.   |
| PS                                       |   |
| XX                                       | Example 10; Page 43; 88pp; English.                                       |
| CC                                       | This peptide was identified as an HLA peptide motif following a screen    |
| CC                                       | for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see        |
| CC                                       | AA58959). 30 Epitopes (see AA106018-47) were identified. The present      |
| CC                                       | peptide (ranked 13) corresponds to amino acid residues 127-135 of CAG-1   |
| CC                                       | ORF1 (see AA105965). CAG-1 is a new and potent tumour antigen capable of  |
| CC                                       | eliciting an antigen specific immune response by T cells. Cancer peptides |
| CC                                       | (see AA105967-87) derived from CAG-3, portions of CAG-3 and their         |
| CC                                       | variants, are useful as cancer vaccines. A claimed method of preventing   |
| CC                                       | or inhibiting cancer involves administering a cancer peptide, with or     |
| CC                                       | without an HLA molecule. The cancer peptides form part of, or are derived |
| CC                                       | from, cancers such as primary or metastatic melanoma, lymphoma,           |
| CC                                       | sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical   |
| CC                                       | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |
| CC                                       | prostate, ovarian, pancreatic and thyroid cancers                         |
| SX                                       |   |
| SS                                       | Sequence 9 AA;  |
| Alignment Scores:                        |   |
| Pred. No.:                               | 816   |
| Score:                                   | 9.00  |
| Percent Similarity:                      | 100.00%   |
| Best Local Similarity:                   | 100.00%   |
| Query Match:                             | 5.00%   |
| DB:                                      | 1   |
| Gaps:                                    | 0   |
| US-10-023-182-1 (1-752) x AAY06030 (1-9) |   |
| Oy                                       | 432 ACTGTGTCGGCAACATACTGACTATC 458  |
| Db                                       |   |
| 1 ThrvAlsercIynAnlleuNrrtle 9            |   |
| RESULT 278                               |   |
| ID                                       | AAY06041 standard; peptide; 9 AA.   |
| XX                                       |   |
| XX                                       | AAV06041;   |
| XX                                       |   |
| DT                                       | 16-AUG-1999 (first entry)   |

|  |         |   |
|--|---------|---|
| DE                                       | XX      | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |
| XX                                       | XX      |   |
| XX                                       | XX      | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |
| KM                                       | KM      | Leukaemia; non-Hodgkins Lymphoma; Hodgkins Lymphoma; lung cancer;         |
| XX                                       | XX      | leukemia; melanoma; adenocarcinoma; thymoma; colon cancer;                |
| KM                                       | KM      | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KM                                       | KM      | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KM                                       | KM      | liver cancer; sarcoma; tumor; diagnosis; immunotherapy; therapy;          |
| XX                                       | XX      | vaccine; human leukocyte antigen; HLA.                                    |
| OS                                       | XX      |   |
| XX                                       | XX      | Homo sapiens.   |
| PN                                       | XX      |   |
| XX                                       | XX      | W09918206-A2.   |
| PD                                       | XX      |   |
| XX                                       | XX      | 15-Apr-1999.  |
| PF                                       | XX      |   |
| XX                                       | XX      | 21-SEP-1998; 98MO-US019609.   |
| PR                                       | XX      |   |
| XX                                       | XX      | 08-OCT-1997; 97US-0061428P.   |
| PA                                       | XX      |   |
| XX                                       | XX      | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| PI                                       | XX      |   |
| XX                                       | XX      | Wang RF, Rosenberg SA;  |
| DR                                       | XX      |   |
| XX                                       | XX      | WPI; 1999-277270/23.  |
| PT                                       | XX      |   |
| XX                                       | XX      | Cancer antigen NY ESO1/CAG-3.   |
| PS                                       | XX      |   |
| XX                                       | XX      | Example 10; Page 43; 88pp; English.                                       |
| CC                                       | CC      | This peptide was identified as an HLA peptide motif following a screen    |
| CC                                       | CC      | for epitopes from the coding region of human ESO-1/CAG-3 ORP1 (see        |
| CC                                       | CC      | AA58599). 30 Epitopes (see AAY06018-47) were identified. The present      |
| CC                                       | CC      | peptide (ranked 24) corresponds to amino acid residues 164-172 of CAG-1   |
| CC                                       | CC      | ORP1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  |
| CC                                       | CC      | eliciting an antigen specific immune response by T cells. Cancer peptides |
| CC                                       | CC      | (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their         |
| CC                                       | CC      | variants, are useful as cancer vaccines. A claimed method of preventing   |
| CC                                       | CC      | or inhibiting cancer involves administering a cancer peptide, with or     |
| CC                                       | CC      | without an HLA molecule. The cancer peptides form part of, or are derived |
| CC                                       | CC      | from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |
| CC                                       | CC      | sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical   |
| CC                                       | CC      | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |
| CC                                       | CC      | prostate, ovarian, pancreatic and thyroid cancers                         |
| XX                                       | XX      |   |
| SQ                                       | SQ      | Sequence 9 AA;  |
| Alignment Scores:                        |         |   |
| Pred. No.:                               | 816     | Length: 9   |
| Score:                                   | 9.00    | Matches: 9  |
| Percent Similarity:                      | 100.00% | Conservative: 0   |
| Best Local Similarity:                   | 100.00% | Mismatches: 0   |
| Query Match:                             | 5.00%   | Indels: 0   |
| DB:                                      | 1       | Gaps: 0   |
| US-10-023-182-1 (1-752) x AAY06041 (1-9) |         |   |
| Oy                                       | 543     | CAGTGGCTTCTGCGCGGTGTTTGGCT 569  |
| Db                                       | 1       | GlnCyspheLeuPheValPheLeuAla 9   |
| RESULT 279                               |         |   |
| AAY06052                                 |         |   |
| XX                                       | XX      | AAI06052 standard; peptide; 9 AA.   |
| XX                                       | XX      |   |
| XX                                       | XX      | AAI06052;   |
| XX                                       | XX      |   |
| DT                                       | XX      | 16-AUG-1999 (first entry)   |
| XX                                       | XX      |   |
| DE                                       | XX      | Human cancer antigen NY ESO-1/CAG-3 peptide ES09-89.                      |
| XX                                       | XX      |   |
| KM                                       | XX      | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |

KM leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KM vaccine; cytotoxic T lymphocyte; CTL.  
XX  
OS Homo sapiens.  
XX  
PN W09918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX  
PS Example 10; Page 45; 88pp; English.  
CC Peptide ESO9-89 corresponds to amino acid residues 171-179 of human NY  
CC ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable  
CC of eliciting an antigen specific immune response by T cells. It was  
CC examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as  
CC release of granulocyte macrophage colony stimulating factor. Cancer  
CC peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and  
CC their variants, are useful as cancer vaccines. A claimed method of  
CC preventing or inhibiting cancer involves administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 9 AA;  
DB: 1  
US-10-023-182-1 (1-752) x AAY06052 (1-9)  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
Gaps: 0  
RESULT 280  
AAY06023  
ID AAY06023 standard; peptide; 9 AA.  
XX  
AC AAY06023;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
KM NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KM leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
XX

KM vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX  
PN W09918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX  
PS Example 10; Page 43; 88pp; English.  
CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present  
CC peptide (ranked 6) corresponds to amino acid residues 44-52 of CAG-1 ORF1  
CC (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 9 AA;  
DB: 1  
US-10-023-182-1 (1-752) x AAY06023 (1-9)  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
Gaps: 0  
RESULT 281  
AAY06046  
ID AAY06046 standard; peptide; 9 AA.  
XX  
AC AAY06046;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
KM NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KM leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KM vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX

```

PN MO9918206-A2.
XX
XX 15-APR-1999.
XX
XX 21-SEP-1998; 98WO-US019609.
XX
XX 08-OCT-1997; 97US-0061428P.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Wang RF, Rosenberg SA;
XX
XX WPI, 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX
XX Example 10; Page 43; 88pp; English.
XX
XX This peptide was identified as an HLA peptide motif following a screen
XX for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
XX AA58599). 30 Epitopes (see AA58599) were identified. The present
XX peptide (ranked 29) corresponds to amino acid residues 54-62 of CAG-1
XX ORF1 (see AA5965). CAG-1 is a new and potent tumour antigen capable of
XX eliciting an antigen specific immune response by T cells. Cancer peptides
XX (see AA5967-87) derived from CAG-3, portions of CAG-3 and their
XX variants, are useful as cancer vaccines. A claimed method of preventing
XX or inhibiting cancer involves administering a cancer peptide, with or
XX without an HLA molecule. The cancer peptides form part of, or are derived
XX from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical
XX cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX prostate, ovarian, pancreatic and thyroid cancers
XX
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AA506046 (1-9)
XX
XX QY 213 TCGGGCCGCGAGAGCGCCCGCGG 239
XX |||||
XX 1 SerGlyProGlyGlyAlaProArg 9
XX
XX RESULT 282
XX AA506021
XX ID AAY06021 standard; peptide; 9 AA.
XX
XX AC AAY06021;
XX
XX DT 16-AUG-1999 (first entry)
XX
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX
XX OS Homo sapiens.
XX
XX PN WO9918206-A2.
XX
XX PD 15-APR-1999.
XX

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PF 21-SEP-1998; 98WO-US019609.
XX
XX 08-OCT-1997; 97US-0061428P.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Wang RF, Rosenberg SA;
XX
XX WPI, 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX
XX Example 10; Page 43; 88pp; English.
XX
XX This peptide was identified as an HLA peptide motif following a screen
XX for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
XX AA58599). 30 Epitopes (see AA58599) were identified. The present
XX peptide (ranked 4) corresponds to amino acid residues 86-94 of CAG-1 ORF1
XX (see AA5965). CAG-1 is a new and potent tumour antigen capable of
XX eliciting an antigen specific immune response by T cells. Cancer peptides
XX (see AA5967-87) derived from CAG-3, portions of CAG-3 and their
XX variants, are useful as cancer vaccines. A claimed method of preventing
XX or inhibiting cancer involves administering a cancer peptide, with or
XX without an HLA molecule. The cancer peptides form part of, or are derived
XX from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical
XX cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX prostate, ovarian, pancreatic and thyroid cancers
XX
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AA506021 (1-9)
XX
XX QY 309 CGCCTGCTTGAGTCTACTCGCCATG 335
XX |||||
XX 1 ArgLeuLeuGluPheTyrLeuAlaMet 9
XX
XX RESULT 283
XX AA506038
XX ID AAY06038 standard; peptide; 9 AA.
XX
XX AC AAY06038;
XX
XX DT 16-AUG-1999 (first entry)
XX
XX DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX
XX OS Homo sapiens.
XX
XX PN WO9918206-A2.
XX
XX PD 15-APR-1999.
XX
XX PF 21-SEP-1998; 98WO-US019609.
XX
XX PR 08-OCT-1997; 97US-0061428P.
XX

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PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX  
PS Example 10; Page 43; 86pp; English.  
XX  
CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORP1 (see  
CC AAY58599). 30 Biotopes (see AAY06018-47) were identified. The present  
CC peptide (ranked 21) corresponds to amino acid residues 135-143 of CAG-1  
CC ORP1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY06038 (1-9)  
OY 456 ATCGAGTGAAGTCTGTCAGACCCG 482  
DB 1 TleArgLeuInrAlaAlaAspHisArg 9  
RESULT 284  
ID AAY06042  
AC AAY06042; standard; peptide; 9 AA.  
XX  
AC AAY06042;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX  
PN MO9918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX

DR WPI; 1999-277270/23.  
XX  
PI Cancer antigen NY ESO1/CAG-3.  
XX  
DR Example 10; Page 43; 86pp; English.  
XX  
PS This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORP1 (see  
CC AAY58599). 30 Biotopes (see AAY06018-47) were identified. The present  
CC peptide (ranked 25) corresponds to amino acid residues 143-151 of CAG-1  
CC ORP1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY06042 (1-9)  
OY 480 CGCCACTGCAAGTCTTCATCAGCTCC 506  
DB 1 ArgGlnLeuGlnLeuSerIleSerSer 9  
RESULT 285  
ID AAY06050  
AC AAY06050; standard; peptide; 9 AA.  
XX  
AC AAY06050;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 peptide ES09-38.  
XX  
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; cytotoxic T lymphocyte; CTL.  
XX  
OS Homo sapiens.  
XX  
PN MO9918206-A2.  
XX  
PD 15-APR-1999.  
XX  
PF 21-SEP-1998; 98WO-US019609.  
XX  
PR 08-OCT-1997; 97US-0061428P.  
XX  
PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PI Wang RF, Rosenberg SA;  
XX  
DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX

PS Example 10; Page 45; 88bp; English.

XX Peptide ESO-38 corresponds to amino acid residues 38-46 of human NY ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of eliciting an antigen specific immune response by T cells. It was examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of granulocyte macrophage colony stimulating factor. Cancer peptides (see CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants, are useful as cancer vaccines. A claimed method of preventing or inhibiting cancer involves administering a cancer peptide, with or without an HLA molecule. The cancer peptides form part of, or are derived from, cancers such as primary or metastatic melanoma, thymoma, lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, prostate, ovarian, pancreatic and thyroid cancers

XX Sequence 9 AA:

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAY06050 (1-9)

OY 165 GTGCGAGCGCGGAGAGTCCCGG 191

DB 1 GYALATnrglyGlyArgGlyProArg 9

RESULT 286

AAY06019

ID AAY06019 standard; peptide; 9 AA.

AC AAY06019;

XX 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.

XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human; leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer; metastasis; melanoma; adenocarcinoma; thymoma; colon cancer; uterine cancer; breast cancer; prostate cancer; ovarian cancer; cervical cancer; bladder cancer; kidney cancer; pancreatic cancer; liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy; vaccine; human leukocyte antigen; HLA.

XX Homo sapiens.

OS WO9918206-A2.

XX 15-APR-1999.

XX 21-SEP-1998; 98WO-US019609.

XX 08-OCT-1997; 97US-0061428P.

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

XX Wang RF, Rosenberg SA;

XX WPI; 1999-277270/23.

XX Cancer antigen NY ESO1/CAG-3.

XX Example 10; Page 43; 88bp; English.

XX This peptide was identified as an HLA peptide motif following a screen for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present

CC peptide (ranked 2) corresponds to amino acid residues 98-106 of CAG-1 ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of eliciting an antigen specific immune response by T cells. Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants, are useful as cancer vaccines. A claimed method of preventing or inhibiting cancer involves administering a cancer peptide, with or without an HLA molecule. The cancer peptides form part of, or are derived from, cancers such as primary or metastatic melanoma, thymoma, lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, prostate, ovarian, pancreatic and thyroid cancers

XX Sequence 9 AA:

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAY06019 (1-9)

OY 345 ACACCCATGGAAGCAGAGCTGCCCGC 371

DB 1 ThrPrometGluAlaGluLeuAlaArg 9

RESULT 287

AAY06034

ID AAY06034 standard; peptide; 9 AA.

AC AAY06034;

XX 16-AUG-1999 (first entry)

DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.

XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human; leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer; metastasis; melanoma; adenocarcinoma; thymoma; colon cancer; uterine cancer; breast cancer; prostate cancer; ovarian cancer; cervical cancer; bladder cancer; kidney cancer; pancreatic cancer; liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy; vaccine; human leukocyte antigen; HLA.

XX Homo sapiens.

OS WO9918206-A2.

XX 15-APR-1999.

XX 21-SEP-1998; 98WO-US019609.

XX 08-OCT-1997; 97US-0061428P.

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

XX Wang RF, Rosenberg SA;

XX WPI; 1999-277270/23.

XX Cancer antigen NY ESO1/CAG-3.

XX Example 10; Page 43; 88bp; English.

XX This peptide was identified as an HLA peptide motif following a screen for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present CC peptide (ranked 17) corresponds to amino acid residues 132-140 of CAG-1 ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of eliciting an antigen specific immune response by T cells. Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their

CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers

XX Sequence 9 AA:

SO Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAY06034 (1-9)

QY 447 ATAGTACTATCCAGTCACTGCTGCA 473  
DB 1 ILeuThrIleAArgLeuThrAlaIa 9

RESULT 288  
AAY06036  
ID AAY06036 standard; peptide; 9 AA.

XX AAY06036;  
AC  
XX  
XX 16-AUG-1999 (first entry)  
DT  
XX  
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.

KW NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; human leukocyte antigen; HLA.

XX  
XX Homo sapiens.  
OS  
XX  
XX WO9918206-A2.  
PN  
XX  
XX 15-APR-1999.  
PD  
XX  
XX 21-SEP-1998; 98WO-US019609.  
PF  
XX  
XX 08-OCT-1997; 97US-0061428P.  
PR  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
PA  
XX  
XX Wang RF, Rosenberg SA;  
PI  
XX  
XX WPI; 1999-277270/23.  
DR  
XX  
XX Cancer antigen NY ESO1/CAG-3.  
PT  
XX  
XX Example 10; Page 43; 88pp; English.

CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present  
CC peptide (ranked 19) corresponds to amino acid residues 128-136 of CAG-1  
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,

CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers

XX Sequence 9 AA:

SO Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAY06036 (1-9)

QY 435 GTGTCCGGCAACATAGTCACTATCCGA 461  
DB 1 ValSerGIyAsnIleLeuThrIleArg 9

RESULT 289  
AAY06018  
ID AAY06018 standard; peptide; 9 AA.

XX AAY06018;  
AC  
XX  
XX 16-AUG-1999 (first entry)  
DT  
XX  
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.

KW NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; human leukocyte antigen; HLA.

XX  
XX Homo sapiens.  
OS  
XX  
XX WO9918206-A2.  
PN  
XX  
XX 15-APR-1999.  
PD  
XX  
XX 21-SEP-1998; 98WO-US019609.  
PF  
XX  
XX 08-OCT-1997; 97US-0061428P.  
PR  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
PA  
XX  
XX Wang RF, Rosenberg SA;  
PI  
XX  
XX WPI; 1999-277270/23.  
DR  
XX  
XX Cancer antigen NY ESO1/CAG-3.  
PT  
XX  
XX Example 10; Page 43; 88pp; English.

CC This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see  
CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present  
CC peptide (ranked 1) corresponds to amino acid residues 172-180 of CAG-1  
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers

SQ Sequence 9 AA;  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAY06018 (1-9)  
 QY 567 GCTCAGCTTCCTCAGGCGAGGCGC 593  
 DB 1 AAlaGlnProSerGlyGlnArgArg 9  
 RESULT 290  
 AAY06022  
 ID AAY06022 standard; peptide; 9 AA.  
 AC AAY06022;  
 XX  
 DT 16-AUG-1999 (first entry)  
 DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
 XX  
 KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; human leukocyte antigen; HLA.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO918206-A2.  
 XX  
 PD 15-APR-1999.  
 XX  
 PF 21-SEP-1998; 98WO-US019609.  
 XX  
 PR 08-OCT-1997; 97US-0061428P.  
 XX  
 PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 XX  
 PI Wang RF, Rosenberg SA;  
 XX  
 DR WPI, 1999-277270/23.  
 XX  
 PT Cancer antigen NY ESO1/CAG-3.  
 XX  
 PS Example 10; Page 43; 88pp; English.  
 XX  
 CC This peptide was identified as an HLA peptide motif following a screen  
 CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present  
 CC peptide (ranked 5) corresponds to amino acid residues 38-46 of CAG-1 ORF1  
 CC (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers  
 CC  
 SQ Sequence 9 AA;  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAY06022 (1-9)  
 QY 165 GGTCACAGCGCGCAGAGTCCCCG 191  
 DB 1 GlyAlaThrGlyGlyArgGlyProArg 9  
 RESULT 291  
 AAY06025  
 ID AAY06025 standard; peptide; 9 AA.  
 AC AAY06025;  
 XX  
 DT 16-AUG-1999 (first entry)  
 DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
 XX  
 KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
 KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KW vaccine; human leukocyte antigen; HLA.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO918206-A2.  
 XX  
 PD 15-APR-1999.  
 XX  
 PF 21-SEP-1998; 98WO-US019609.  
 XX  
 PR 08-OCT-1997; 97US-0061428P.  
 XX  
 PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 XX  
 PI Wang RF, Rosenberg SA;  
 XX  
 DR WPI, 1999-277270/23.  
 XX  
 PT Cancer antigen NY ESO1/CAG-3.  
 XX  
 PS Example 10; Page 43; 88pp; English.  
 XX  
 CC This peptide was identified as an HLA peptide motif following a screen  
 CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present  
 CC peptide (ranked 8) corresponds to amino acid residues 154-162 of CAG-1  
 CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers  
 CC  
 SQ Sequence 9 AA;  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0

```
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAY06025 (1-9)
QY 513 CAGCAGCTTCCCTGTTGATGTGATC 539
Db 1 GlnGlnLeuSerLeuLeuMetCpIle 9

RESULT 292
AAY06045
ID AAY06045 standard; peptide; 9 AA.
XX
XX AAY06045;
XX
XX 16-AUG-1999 (first entry)
XX
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
XX
XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX
XX Homo sapiens.
XX
XX MO9918206-A2.
XX
XX 15-APR-1999.
XX
XX 21-SEP-1998; 98WO-US019609.
XX
XX 08-OCT-1997; 97US-0061428P.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Wang RF, Rosenberg SA;
XX
XX WPI; 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX
XX Example 10; Page 43; 88pp; English.
XX
XX This peptide was identified as an HLA peptide motif following a screen
XX for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
XX AA58599). 30 Epitopes (see AAY06018-47) were identified. The present
XX peptide (franked 28) corresponds to amino acid residues 134-142 of CAG-1
XX ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of
XX eliciting an antigen specific immune response by T cells. Cancer peptides
XX (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their
XX variants, are useful as cancer vaccines. A claimed method of preventing
XX or inhibiting cancer involves administering a cancer peptide, with or
XX without an HLA molecule. The cancer peptides form part of, or are derived
XX from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
XX sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
XX cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
XX prostate, ovarian, pancreatic and thyroid cancers
XX
XX Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAY06045 (1-9)
```

```
QY 453 ACTATCCAGTCACTGCTGCAGACAC 479
Db 1 ThrIleArgLeuThrAlaAlaAspHis 9

RESULT 293
AAY06054
ID AAY06054 standard; peptide; 9 AA.
XX
XX AAY06054;
XX
XX 16-AUG-1999 (first entry)
XX
XX Human cancer antigen NY ESO-1/CAG-3 peptide ESO9-35.
XX
XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; cytotoxic T lymphocyte; CTL.
XX
XX Homo sapiens.
XX
XX MO9918206-A2.
XX
XX 15-APR-1999.
XX
XX 21-SEP-1998; 98WO-US019609.
XX
XX 08-OCT-1997; 97US-0061428P.
XX
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
XX Wang RF, Rosenberg SA;
XX
XX WPI; 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX
XX Example 10; Page 45; 88pp; English.
XX
XX Peptide ESO9-35 corresponds to amino acid residues 135-143 of human NY
XX ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable
XX of eliciting an antigen specific immune response by T cells. It was
XX examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as
XX release of granulocyte macrophage colony stimulating factor. Cancer
XX peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and
XX their variants, are useful as cancer vaccines. A claimed method of
XX preventing or inhibiting cancer involves administering a cancer peptide,
XX with or without an HLA molecule. The cancer peptides form part of, or are
XX derived from, cancers such as primary or metastatic melanoma, thymoma,
XX lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
XX cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such
XX as breast, prostate, ovarian, pancreatic and thyroid cancers
XX
XX Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAY06054 (1-9)
QY 456 ATCCGACTGACTGCTGCAGACACCCG 482
Db 1 IleArgLeuThrAlaAlaAspHisArg 9

RESULT 294
```

|   |   |               |                          |
|---|---|---------------|--------------------------|
| ID  | AAV06039  |               | standard; peptide; 9 AA. |
| XX  | AAV06039  |               |                          |
| AC  | AAV06039;   |               |                          |
| XX  |   |               |                          |
| DT  | 16-AUG-1999   | (first entry) |                          |
| XX  |   |               |                          |
| DE  | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |               |                          |
| XX  |   |               |                          |
| KW  | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |               |                          |
| KM  | leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;          |               |                          |
| KM  | Melanoblasts; melanoma; adenocarcinoma; thymoma; colon cancer;            |               |                          |
| KM  | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |               |                          |
| KM  | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |               |                          |
| KM  | liver cancer; sarcoma; tumor; diagnosis; immunotherapy; therapy;          |               |                          |
| KM  | vaccine; human leukocyte antigen; HLA.                                    |               |                          |
| OS  | Homo sapiens.   |               |                          |
| XX  |   |               |                          |
| PN  | MO9918206-A2.   |               |                          |
| XX  |   |               |                          |
| PD  | 15-APR-1999.  |               |                          |
| XX  |   |               |                          |
| PF  | 21-SEP-1998; 98MO-US019609.   |               |                          |
| XX  |   |               |                          |
| PR  | 08-OCT-1997; 97US-0061428P.   |               |                          |
| XX  |   |               |                          |
| PA  | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |               |                          |
| XX  |   |               |                          |
| PI  | Wang RF, Rosenberg SA;  |               |                          |
| XX  |   |               |                          |
| DR  | WPI; 1999-277270/23.  |               |                          |
| XX  |   |               |                          |
| PT  | Cancer antigen NY ESO1/CAG-3.   |               |                          |
| XX  |   |               |                          |
| PS  | Example 10; Page 43; 88pp; English.                                       |               |                          |
| CC  | This peptide was identified as an HLA peptide motif following a screen    |               |                          |
| CC  | for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see        |               |                          |
| CC  | CAA58599). 30 Epitopes (see AAY06018-47) were identified. The present     |               |                          |
| CC  | peptide (ranked 22) corresponds to amino acid residues 152-160 of CAG-1   |               |                          |
| ORF1 (see AAY05965).  | CAG-1 is a new and potent tumour antigen capable of                       |               |                          |
| CC  | eliciting an antigen specific immune response by T cells. Cancer peptides |               |                          |
| CC  | (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their         |               |                          |
| variants, are useful as cancer vaccines. A claimed method of preventing   |   |               |                          |
| or inhibiting cancer involves administering a cancer peptide, with or     |   |               |                          |
| without an HLA molecule. The cancer peptides form part of, or are derived |   |               |                          |
| from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |   |               |                          |
| sarcoma, lung cancer, liver cancer, leukemia, uterine cancer, cervical    |   |               |                          |
| cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |   |               |                          |
| prostate, ovarian, pancreatic and thyroid cancers                         |   |               |                          |
| XX  |   |               |                          |
| SQ  | Sequence 9 AA;  |               |                          |
| Alignment Scores:   |   |               |                          |
| Pred. No.:  | 816   | Length:       | 9                        |
| Score:  | 9.00  | Matches:      | 9                        |
| Percent Similarity:   | 100.00%   | Conservative: | 0                        |
| Best Local Similarity:  | 100.00%   | Mismatches:   | 0                        |
| Query Match:  | 5.00%   | Indels:       | 0                        |
| Gaps:   | 1   | Gaps:         | 0                        |
| US-10-023-182-1   | (1-752) X AAY06039  | (1-9)         |                          |
| OY  | 507 TGTCCTCAGCAGCTTTTCCCTGTTGATG 533                                      |               |                          |
| DB  |   |               |                          |
| Db  | 1 CysLeuGlndInIeueSerIeuIeumet 9  |               |                          |
| RESULT 295  |   |               |                          |
| AAV06044  |   |               |                          |
| ID  | AAV06044 standard; peptide; 9 AA.   |               |                          |
| XX  |   |               |                          |
| CC  | AAV06044;   |               |                          |

[illegible]

|  |   |
|--|---|
| XX                                       | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |
| KW                                       | leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;         |
| KW                                       | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KW                                       | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KW                                       | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KW                                       | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |
| KW                                       | vaccine; cytotoxic T lymphocyte; CTL.                                     |
| XX                                       |   |
| OS                                       | Homo sapiens.   |
| PN                                       | MO918206-A2.  |
| XX                                       |   |
| PD                                       | 15-APR-1999.  |
| XX                                       |   |
| PF                                       | 21-SEP-1998; 98WO-US019609.   |
| XX                                       |   |
| PR                                       | 08-OCT-1997; 97US-0061428P.   |
| XX                                       |   |
| PA                                       | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| XX                                       |   |
| P1                                       | Wang RF, Rosenberg SA;  |
| XX                                       |   |
| DR                                       | WPI, 1999-277270/23.  |
| XX                                       |   |
| PT                                       | Cancer antigen NY ESO1/CAG-3.   |
| XX                                       |   |
| PS                                       | Example 10; Page 45; 89pp; English.                                       |
| XX                                       |   |
| CC                                       | Peptide ESO9-90 corresponds to amino acid residues 98-106 of human NY ESO |
| CC                                       | -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of  |
| CC                                       | eliciting an antigen specific immune response by T cells. It was examined |
| CC                                       | for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of  |
| CC                                       | granulocyte macrophage colony stimulating factor. Cancer peptides (see    |
| CC                                       | AAY05967-77) derived from CAG-3, portions of CAG-3 and their variants,    |
| CC                                       | are useful as cancer vaccines. A claimed method of preventing or          |
| CC                                       | inhibiting cancer involves administering a cancer peptide, with or        |
| CC                                       | without an HLA molecule. The cancer peptides form part of, or are derived |
| CC                                       | from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |
| CC                                       | sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical   |
| CC                                       | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |
| CC                                       | prostate, ovarian, pancreatic and thyroid cancers                         |
| XX                                       |   |
| SO                                       | Sequence 9 AA:  |
| XX                                       |   |
| Alignment Scores:                        |   |
| Pred. No.:                               | 816   |
| Score:                                   | 9.00  |
| Percent Similarity:                      | 100.00%   |
| Best Local Similarity:                   | 100.00%   |
| Query Match:                             | 5.00%   |
| DB:                                      | 1   |
| US-10-023-182-1 (1-752) x AAY06048 (1-9) |   |
| QY                                       | 345 ACACCCATGGAAGACAGAGCTGCGCCG 371                                       |
| Db                                       | 1 ThrPrometGluAlaGluLeuAlaArg 9   |
| RESULT 297                               |   |
| AAY05987                                 | standard; peptide; 9 AA.  |
| XX                                       |   |
| AC                                       | AAY05987;   |
| XX                                       |   |
| DT                                       | 16-AUG-1999 (first entry)   |
| XX                                       |   |
| DE                                       | Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide ESO9-90.          |
| XX                                       |   |
| KW                                       | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |
| KW                                       | leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;         |
| KW                                       | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KW                                       | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |

[illegible]

KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KM vaccine; human leukocyte antigen; HLA.  
OS Homo sapiens.  
XX WO9918206-A2.  
XX 15-APR-1999.  
XX PD 21-SEP-1998; 98WO-US019609.  
XX PF 08-OCT-1997; 97US-0061428P.  
XX PR (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX PA Wang RF, Rosenberg SA;  
XX WPI, 1999-277270/23.  
XX Cancer antigen NY ESO1/CAG-3.  
XX Example 10; Page 43; 88pp; English.  
XX PS This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present  
CC peptide (ranked 23) corresponds to amino acid residues 110-118 of CAG-1  
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY0567-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
CC patient  
XX SQ Sequence 9 AA;  
XX Alignment Scores:  
XX Pred. No.: 816 Length: 9  
XX Score: 9.00 Matches: 9  
XX Percent Similarity: 100.00% Conservative: 0  
XX Best Local Similarity: 100.00% Mismatches: 0  
XX Query Match: 5.00% Indels: 0  
XX DB: 1 Gaps: 0  
XX US-10-023-182-1 (1-752) x AAY06040 (1-9)  
OY 381 GCCCAGATGCCACCGCTCCCGTG 407  
DB 1 AAGAGnAspAlaProProLeuProVal 9  
RESULT 299  
AAY05968  
ID AAY05968 standard; peptide; 9 AA.  
XX AAY05968;  
XX 16-AUG-1999 (first entry)  
XX Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide ES09-54.  
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KM leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KM vaccine.

XX OS Homo sapiens.  
XX PN WO9918206-A2.  
XX PD 15-APR-1999.  
XX PF 21-SEP-1998; 98WO-US019609.  
XX PR 08-OCT-1997; 97US-0061428P.  
XX PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX PI Wang RF, Rosenberg SA;  
XX WPI, 1999-277270/23.  
XX Cancer antigen NY ESO1/CAG-3.  
XX Claim 29; Page 10; 88pp; English.  
XX PS This sequence represents cancer peptide ES09-54 that corresponds to amino  
CC acid residues 55-62 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see AAY05965),  
CC a new and potent tumour antigen capable of eliciting an antigen specific  
CC immune response by T cells. Cancer peptides derived from CAG-3 ORF1, CAG-  
CC 3 ORF2 (see AAY05966), portions of them and their variants (see AAY0567-  
CC 87), are useful as cancer vaccines that protect against cancer. The  
CC invention provides: vectors and host cells (also useful as vaccines); a  
CC method of diagnosis of cancer or precancer; a transgenic animal;  
CC antisense oligonucleotides that inhibit expression of the cancer peptide  
CC or tumour antigen; antibodies reacting with a CAG-3 cancer peptide;  
CC useful in diagnostic and detection assays; and methods for preventing or  
CC inhibiting cancer by administering a cancer peptide, with or without an  
CC HLA molecule. The cancer peptides form part of, or are derived from,  
CC cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by  
CC inducing cancer-specific T cells in vitro for subsequent return to a  
CC patient  
XX SQ Sequence 9 AA;  
XX Alignment Scores:  
XX Pred. No.: 816 Length: 9  
XX Score: 9.00 Matches: 9  
XX Percent Similarity: 100.00% Conservative: 0  
XX Best Local Similarity: 100.00% Mismatches: 0  
XX Query Match: 5.00% Indels: 0  
XX DB: 1 Gaps: 0  
XX US-10-023-182-1 (1-752) x AAY05968 (1-9)  
OY 213 TCGGGGCCGGAGAGAGCGCCCGCGG 239  
DB 1 SerGlyProGlyGlyGlyAlaProArg 9  
RESULT 300  
AAY06026  
ID AAY06026 standard; peptide; 9 AA.  
XX AAY06026;  
XX 16-AUG-1999 (first entry)  
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KM leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KM



|  |   |
|--|---|
| KW                                       | vaccine; human leukocyte antigen; HLA.                                    |
| XX                                       |   |
| OS                                       | Homo sapiens.   |
| XX                                       |   |
| PV                                       | WO9918206-A2.   |
| PN                                       |   |
| PD                                       | 15-APR-1999.  |
| XX                                       |   |
| PF                                       | 21-SEP-1998; 98WO-US019609.   |
| XX                                       |   |
| PR                                       | 08-OCT-1997; 97US-0061428P.   |
| XX                                       |   |
| PA                                       | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| XX                                       |   |
| PI                                       | Wang RF, Rosenberg SA;  |
| XX                                       |   |
| DR                                       | WPI; 1999-277270/23.  |
| XX                                       |   |
| PT                                       | Cancer antigen NY ESO1/CAG-3.   |
| XX                                       |   |
| PS                                       | Example 10; Page 43; 88pp; English.                                       |
| CC                                       |   |
| XX                                       | This peptide was identified as an HLA peptide motif following a screen    |
| CC                                       | for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see        |
| CC                                       | AAV58599) . 30 Epitopes (see AAY06018-47) were identified. The present    |
| CC                                       | peptide (ranked 9) corresponds to amino acid residues 116-124 of CAG-1    |
| CC                                       | ORF1 (see AAY05965) . CAG-1 is a new and potent tumour antigen capable of |
| CC                                       | eliciting an antigen specific immune response by T cells. Cancer peptides |
| CC                                       | (see AAY0567-87) derived from CAG-3, portions of CAG-3 and their          |
| CC                                       | variants, are useful as cancer vaccines. A claimed method of preventing   |
| CC                                       | or inhibiting cancer involves administering a cancer peptide, with or     |
| CC                                       | without an HLA molecule. The cancer peptides form part of, or are derived |
| CC                                       | from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |
| CC                                       | sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical   |
| CC                                       | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |
| CC                                       | prostate, ovarian, pancreatic and thyroid cancers                         |
| XX                                       |   |
| SQ                                       | Sequence 9 AA;  |
| XX                                       |   |
| Alignment Scores:                        |   |
| Pred. No.:                               | 816 Length: 9   |
| Score:                                   | 9.00 Matches: 9   |
| Percent Similarity:                      | 100.00% Conservative: 0   |
| Best Local Similarity:                   | 100.00% Mismatches: 0   |
| Query Match:                             | 5.00% Indels: 0   |
| DB:                                      | 1 Gaps: 0   |
| XX                                       |   |
| US_10-023-182-1 (1-752) x AAY06026 (1-9) |   |
| Oy                                       | 399 CTTCGGTGCCAGGGGCTTGTGAAG 425  |
| Db                                       | <br>1 LeuProValProGlyValLeuLeuLys 9<br>                                   |
| RESULT 301                               |   |
| ID                                       | AAY06027 standard; peptide; 9 AA.   |
| AC                                       | AAY06027;   |
| XX                                       |   |
| DT                                       | 16-AUG-1999 (first entry)   |
| DE                                       |   |
| XX                                       | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |
| KW                                       | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;          |
| KW                                       | leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;         |
| KW                                       | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KW                                       | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KW                                       | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KW                                       | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |
| KW                                       | vaccine; human leukocyte antigen; HLA.                                    |
| XX                                       |   |
| OS                                       | Homo sapiens.   |
| XX                                       |   |

|  |   |
|--|---|
| XX                                       | MW0918206-A2.   |
| XP                                       | 15-APR-1999.  |
| XX                                       | 21-SEP-1998; 98WO-US019609.   |
| XX                                       | 08-OCT-1997; 97US-0061428P.   |
| PA                                       | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                  |
| PI                                       | Wang RF, Rosenberg SA;  |
| DR                                       | WPI; 1999-277270/23.  |
| XX                                       | Cancer antigen NY ESO1/CAG-3.   |
| PS                                       | Example 10; Page 43; 88pp; English.                                       |
| CC                                       | This peptide was identified as an HLA peptide motif following a screen    |
| CC                                       | for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see        |
| CC                                       | AAY8599). 30 Epitopes (see AAY06018-47) were identified. The present      |
| CC                                       | peptide (ranked 10) corresponds to amino acid residues 120-128 of CAG-1   |
| CC                                       | ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  |
| CC                                       | eliciting an antigen specific immune response by T cells. Cancer peptides |
| CC                                       | (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their         |
| CC                                       | variants, are useful as cancer vaccines. A claimed method of preventing   |
| CC                                       | or inhibiting cancer involves administering a cancer peptide, with or     |
| CC                                       | without an HLA molecule. The cancer peptides form part of, or are derived |
| CC                                       | from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  |
| CC                                       | sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical   |
| CC                                       | cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, |
| CC                                       | prostate, ovarian, pancreatic and thyroid cancers                         |
| XX                                       | Sequence 9 AA;  |
| SQ                                       |   |
| Alignment Scores:                        |   |
| Pred. NO.:                               | 816 Length: 9   |
| Score:                                   | 9.00 Matches: 9   |
| Percent Similarity:                      | 100.00% Conservative: 0   |
| Best local Similarity:                   | 100.00% Mismatches: 0   |
| Query Match:                             | 5.00% Indels: 0   |
| DB:                                      | 1 Gaps: 0   |
| US-10-023-182-1 (1-752) x AAY06027 (1-9) |   |
| OY                                       | 411 GGSGTGTCTTGAAAGATTCACTGNG 437   |
| Db                                       | <br>1 GlyValIleuLeuLyscIuPhenIval 9                                       |
| RESULT 302                               |   |
| ID                                       | AAY06028 standard; peptide; 9 AA.   |
| AC                                       | AAY06028;   |
| XX                                       | 16-AUG-1999 (first entry)   |
| DE                                       | Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.                    |
| NY                                       | ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;             |
| KW                                       | leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;          |
| KW                                       | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;              |
| KW                                       | uterine cancer; breast cancer; prostate cancer; ovarian cancer;           |
| KW                                       | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;        |
| KW                                       | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;         |
| KW                                       | vaccine; human leukocyte antigen; HLA.                                    |
| OS                                       | Homo sapiens.   |
| XX                                       |   |
| FN                                       | MW0918206-A2.   |
| XX                                       |   |
| PD                                       | 15-APR-1999.  |
| XX                                       |   |

PF 21-SEP-1998; 98WO-US019609.  
XX  
XX 08-OCT-1997; 97US-0061428P.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
PA  
XX Wang RF, Rosenberg SA;  
PI  
XX WPI; 1999-277270/23.  
XX  
XX Cancer antigen NY ESO1/CAG-3.  
PT  
XX  
XX Example 10; Page 43; 88pp; English.  
PS  
XX This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present  
CC peptide (ranked 11) corresponds to amino acid residues 131-139 of CAG-1  
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
XX SQ Sequence 9 AA;  
XX  
XX Alignment Scores:  
XX Pred. No.: 816 Length: 9  
XX Score: 9.00 Matches: 9  
XX Percent Similarity: 100.00% Conservative: 0  
XX Best Local Similarity: 100.00% Mismatches: 0  
XX Query Match: 5.00% Indels: 0  
XX DB: 1 Gaps: 0  
XX  
XX US-10-023-182-1 (1-752) x AAY06028 (1-9)  
XX  
XX QY 444 AACATAGCTGACTATCGACTGCTGCT 470  
XX DB 1 Aenllelvtlrhllelrglvtlrhla 9  
XX  
XX RESULT 303  
XX AAY06037  
XX ID AAY06037 standard; peptide; 9 AA.  
XX AC AAY06037;  
XX  
XX 16-AUG-1999 (first entry)  
XX  
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
XX uterine cancer; breast cancer; prostate cancer; kidney cancer; ovarian cancer;  
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
XX vaccine; human leukocyte antigen; HLA.  
XX  
XX Homo sapiens.  
XX  
XX WO9918206-A2.  
XX  
XX 15-APR-1999.  
XX  
XX 21-SEP-1998; 98WO-US019609.  
XX  
XX 08-OCT-1997; 97US-0061428P.  
XX

PA (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
XX Wang RF, Rosenberg SA;  
XX  
XX WPI; 1999-277270/23.  
XX  
XX Cancer antigen NY ESO1/CAG-3.  
PT  
XX  
XX Example 10; Page 43; 88pp; English.  
PS  
XX This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
CC AAY58599). 30 Epitopes (see AAY06018-47) were identified. The present  
CC peptide (ranked 20) corresponds to amino acid residues 145-153 of CAG-1  
CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
XX  
XX SQ Sequence 9 AA;  
XX  
XX Alignment Scores:  
XX Pred. No.: 816 Length: 9  
XX Score: 9.00 Matches: 9  
XX Percent Similarity: 100.00% Conservative: 0  
XX Best Local Similarity: 100.00% Mismatches: 0  
XX Query Match: 5.00% Indels: 0  
XX DB: 1 Gaps: 0  
XX  
XX US-10-023-182-1 (1-752) x AAY06037 (1-9)  
XX  
XX QY 486 CTGACGCTCTCCATCAGCTCTCTGCTC 512  
XX DB 1 LeuGlnLeuSerIleSerSerCysLeu 9  
XX  
XX RESULT 304  
XX AAY06051  
XX ID AAY06051 standard; peptide; 9 AA.  
XX AC AAY06051;  
XX  
XX 16-AUG-1999 (first entry)  
XX  
XX Human cancer antigen NY ESO-1/CAG-3 peptide ES09-38.  
XX  
XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
XX vaccine; cytotoxic T lymphocyte; CTL.  
XX  
XX Homo sapiens.  
XX  
XX WO9918206-A2.  
XX  
XX 15-APR-1999.  
XX  
XX 21-SEP-1998; 98WO-US019609.  
XX  
XX 08-OCT-1997; 97US-0061428P.  
XX  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
XX Wang RF, Rosenberg SA;  
XX

DR WPI; 1999-277270/23.  
XX  
PT Cancer antigen NY ESO1/CAG-3.  
XX  
PS Example 10; Page 45; 88pp; English.  
XX  
CC Peptide ESO9-45 corresponds to amino acid residues 46-52 of human NY ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of eliciting an antigen specific immune response by T cells. It was examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of granulocyte macrophage colony stimulating factor. Cancer peptides (see CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants, are useful as cancer vaccines. A claimed method of preventing or inhibiting cancer involves administering a cancer peptide, with or without an HLA molecule. The cancer peptides form part of, or are derived from, cancers such as primary or metastatic melanoma, thymoma, lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY06051 (1-9)  
QY 183 GGTCGGGGGCGGAGGCGGAGGCAAG 209  
DB 1 G1YPROARG1YAlaG1YAlaAlaArg 9  
RESULT 305  
ID AAY05981  
AC AAY05981 standard; peptide; 9 AA.  
XX  
XX AAY05981;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 ORF2 cancer peptide.  
XX  
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human; leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer; metastasis; melanoma; adenocarcinoma; thymoma; colon cancer; uterine cancer; breast cancer; prostate cancer; ovarian cancer; cervical cancer; bladder cancer; kidney cancer; pancreatic cancer; liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy; vaccine.  
XX  
XX Homo sapiens.  
XX OS  
XX MO9918206-A2.  
XX PN  
XX 15-APR-1999.  
XX PD  
XX 21-SEP-1998; 98WO-US019609.  
XX PF  
XX 08-OCT-1997; 97US-0061428P.  
XX PR  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX PA  
XX Wang RF, Rosenberg SA;  
XX PI  
XX WPI; 1999-277270/23.  
XX DR  
XX N-PSDB; AAX58602.  
XX  
XX Cancer antigen NY ESO1/CAG-3.  
XX PT

PS Claim 27; Page 65; 88pp; English.  
XX  
XX The present sequence represents a cancer peptide that corresponds to amino acid residues 19-27 of human ESO-1/CAG-3 (or CAG-3) ORF2 (see CC AAY05966), a new and potent tumour antigen capable of eliciting an antigen specific immune response by T cells. Cancer peptides derived from CAG-3 ORF2, CAG-3 ORF1 (see AAY05965), portions of them and their variants (see AAY05967-87), are useful as cancer vaccines that protect against cancer. The invention provides: vectors and host cells (also useful as vaccines); a method of diagnosis of cancer or precancer; a transgenic animal; antisense oligonucleotides that inhibit expression of the cancer peptide or tumour antigen; antibodies reacting with a CAG-3 cancer peptide, useful in diagnostic and detection assays; and methods for preventing or inhibiting cancer by administering a cancer peptide, with or without an HLA molecule. The cancer peptides form part of, or are derived from, cancers such as primary or metastatic melanoma, thymoma, lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by inducing cancer-specific T cells in vitro for subsequent return to a patient  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY05981 (1-9)  
QY 148 GCGGCGGAGAGGCGGGTGCCACGG 174  
DB 1 AlaAlaGInGInuArgArgValProArg 9  
RESULT 306  
ID AAY06020  
AC AAY06020 standard; peptide; 9 AA.  
XX  
XX AAY06020;  
XX  
DT 16-AUG-1999 (first entry)  
XX  
DE Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
XX  
KW NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human; leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer; metastasis; melanoma; adenocarcinoma; thymoma; colon cancer; uterine cancer; breast cancer; prostate cancer; ovarian cancer; cervical cancer; bladder cancer; kidney cancer; pancreatic cancer; liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy; vaccine; human leukocyte antigen; HLA.  
XX  
XX Homo sapiens.  
XX OS  
XX MO9918206-A2.  
XX PN  
XX 15-APR-1999.  
XX PD  
XX 21-SEP-1998; 98WO-US019609.  
XX PF  
XX 08-OCT-1997; 97US-0061428P.  
XX PR  
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX PA  
XX Wang RF, Rosenberg SA;  
XX PI  
XX WPI; 1999-277270/23.  
XX DR  
XX Cancer antigen NY ESO1/CAG-3.  
XX PT

```
XX Example 10; Page 43; 88pp; English.
PS
CC This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human NY ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA06018-47) were identified. The present
CC peptide (ranked 3) corresponds to amino acid residues 99-107 of CAG-1
CC ORF1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AA05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
CC
XX Sequence 9 AA:
SQ
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AA06020 (1-9)
OY 348 CCCATGGAAGCAGAGCTGCGCCGACAG 374
Db 1 PrometGluAlaGluLeuAlaArg 9
RESULT 307
AA06035
ID AA06035 standard; peptide; 9 AA.
AC AA06035;
XX
XX 16-AUG-1999 (first entry)
DT
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
DE
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX
XX Homo sapiens.
OS
XX WO9918206-A2.
PN
XX 15-APR-1999.
PD
XX 21-SEP-1998; 98WO-US019609.
PF
XX 08-OCT-1997; 97US-0061428P.
PR
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA
XX Wang RF, Rosenberg SA;
PI
XX WPI; 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX
XX Example 10; Page 43; 88pp; English.
XX
XX This peptide was identified as an HLA peptide motif following a screen
```

```
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA06018-47) were identified. The present
CC peptide (ranked 18) corresponds to amino acid residues 148-156 of CAG-1
CC ORF1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of
CC eliciting an antigen specific immune response by T cells. Cancer peptides
CC (see AA05967-87) derived from CAG-3, portions of CAG-3 and their
CC variants, are useful as cancer vaccines. A claimed method of preventing
CC or inhibiting cancer involves administering a cancer peptide, with or
CC without an HLA molecule. The cancer peptides form part of, or are derived
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,
CC prostate, ovarian, pancreatic and thyroid cancers
CC
XX Sequence 9 AA:
SQ
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AA06035 (1-9)
OY 495 TCCATCAGCTCCTGTCCTCCAGCAGCTT 521
Db 1 SerIleSerSerCybIleuGlnGlnLeu 9
RESULT 308
AA06024
ID AA06024 standard; peptide; 9 AA.
AC AA06024;
XX
XX 16-AUG-1999 (first entry)
DT
XX Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
DE
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;
XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;
XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;
XX uterine cancer; breast cancer; prostate cancer; ovarian cancer;
XX cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;
XX liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
XX vaccine; human leukocyte antigen; HLA.
XX
XX Homo sapiens.
OS
XX WO9918206-A2.
PN
XX 15-APR-1999.
PD
XX 21-SEP-1998; 98WO-US019609.
PF
XX 08-OCT-1997; 97US-0061428P.
PR
XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.
PA
XX Wang RF, Rosenberg SA;
PI
XX WPI; 1999-277270/23.
XX
XX Cancer antigen NY ESO1/CAG-3.
XX
XX Example 10; Page 43; 88pp; English.
XX
XX This peptide was identified as an HLA peptide motif following a screen
CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see
CC AA58599). 30 Epitopes (see AA06018-47) were identified. The present
CC peptide (ranked 7) corresponds to amino acid residues 171-179 of CAG-1
CC ORF1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of
```

CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers

XX  
XX Sequence 9 AA;

SO

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAY06024 (1-9)

OY 564 TTGGCTCAGCCTCCTCAGGCGAGG 590

DB 1 LeuAlaGlnProPheSerGlyGlnArg 9

RESULT 309

AAY06049

ID AAY06049 standard; peptide; 9 AA.

XX AAY06049;

AC

XX 16-AUG-1999 (first entry)

DT

XX Human cancer antigen NY ESO-1/CAG-3 peptide ES09-99.

DE

XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; cytotoxic T lymphocyte; CTL.

XX  
XX Homo sapiens.

OS

XX MO9918206-A2.

PN

XX 15-APR-1999.

PD

XX 21-SEP-1998; 98WO-US019609.

PF

XX 08-OCT-1997; 97US-0061428P.

PR

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

PA

XX Wang RF, Rosenberg SA;

PI

XX WPI; 1999-277270/23.

DR

XX Cancer antigen NY ESO1/CAG-3.

PT

XX Example 10; Page 45; 88pp; English.

PS

XX Peptide ES09-99 corresponds to amino acid residues 99-107 of human NY ESO  
CC -1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. It was examined  
CC for reactivity to a cytotoxic T lymphocyte (CTL), measured as release of  
CC granulocyte macrophage colony stimulating factor. Cancer peptides (see  
CC AAY05967-87) derived from CAG-3, portions of CAG-3 and their variants,  
CC are useful as cancer vaccines. A claimed method of preventing or  
CC inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived

CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers

XX  
XX Sequence 9 AA;

SO

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAY06049 (1-9)

OY 348 CCCATGAGCAGAGCTGCCCCGAGG 374

DB 1 ProMetGluAlaGlnLeuAlaArgArg 9

RESULT 310

AAY06053

ID AAY06053 standard; peptide; 9 AA.

XX AAY06053;

AC

XX 16-AUG-1999 (first entry)

DT

XX Human cancer antigen NY ESO-1/CAG-3 peptide ES09-128.

DE

XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; cytotoxic T lymphocyte; CTL.

XX  
XX Homo sapiens.

OS

XX MO9918206-A2.

PN

XX 15-APR-1999.

PD

XX 21-SEP-1998; 98WO-US019609.

PF

XX 08-OCT-1997; 97US-0061428P.

PR

XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.

PA

XX Wang RF, Rosenberg SA;

PI

XX WPI; 1999-277270/23.

DR

XX Cancer antigen NY ESO1/CAG-3.

PT

XX Example 10; Page 45; 88pp; English.

PS

XX Peptide ES09-128 corresponds to amino acid residues 128-136 of human NY  
CC ESO-1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen capable  
CC of eliciting an antigen specific immune response by T cells. It was  
CC examined for reactivity to a cytotoxic T lymphocyte (CTL), measured as  
CC release of granulocyte macrophage colony stimulating factor. Cancer  
CC peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3 and  
CC their variants, are useful as cancer vaccines. A claimed method of  
CC preventing or inhibiting cancer involves administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers

SQ Sequence 9 AA;  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAY06053 (1-9)  
 QY 435 GTGTCGGCACATCTGACTATCCGA 461  
 Db 1 ValserglyAsnileuThrIleArg 9  
 RESULT 311  
 AAY06043  
 ID AAY06043 standard; peptide; 9 AA.  
 AC AAY06043;  
 XX  
 XX 16-AUG-1999 (first entry)  
 DT Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
 DE  
 XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
 XX leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 XX metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KM vaccine; human leukocyte antigen; HLA.  
 XX  
 XX Homo sapiens.  
 OS  
 XX WO9918206-A2.  
 PN  
 XX 15-APR-1999.  
 PD  
 XX 21-SEP-1998; 98WO-US019609.  
 PF  
 XX 08-OCT-1997; 97US-0061428P.  
 PR  
 XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 PA  
 XX Wang RF, Rosenberg SA;  
 PI  
 XX WPI, 1999-277270/23.  
 DR  
 XX Cancer antigen NY ESO1/CAG-3.  
 PT  
 XX Example 10; Page 43; 88pp; English.  
 PS  
 XX This peptide was identified as an HLA peptide motif following a screen  
 CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AA585599). 30 Epitopes (see AAY06018-47) were identified. The present  
 CC peptide (ranked 26) corresponds to amino acid residues 108-116 of CAG-1  
 CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers  
 CC  
 CC Sequence 9 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0

Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAY06043 (1-9)  
 QY 375 AGCCTGGCCAGATGCCCCACCGCTT 401  
 Db 1 SerineAlaGlnaPheIaIaProIleu 9  
 RESULT 312  
 AAY06032  
 ID AAY06032 standard; peptide; 9 AA.  
 AC AAY06032;  
 XX  
 XX 16-AUG-1999 (first entry)  
 DT Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
 DE  
 XX NY ESO-1/CAG-3 gene; cancer peptide; antigen; human;  
 KM leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
 KM metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
 KM uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
 KM cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
 KM liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
 KM vaccine; human leukocyte antigen; HLA.  
 XX  
 XX Homo sapiens.  
 OS  
 XX WO9918206-A2.  
 PN  
 XX 15-APR-1999.  
 PD  
 XX 21-SEP-1998; 98WO-US019609.  
 PF  
 XX 08-OCT-1997; 97US-0061428P.  
 PR  
 XX (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
 PA  
 XX Wang RF, Rosenberg SA;  
 PI  
 XX WPI, 1999-277270/23.  
 DR  
 XX Cancer antigen NY ESO1/CAG-3.  
 PT  
 XX Example 10; Page 43; 88pp; English.  
 PS  
 XX This peptide was identified as an HLA peptide motif following a screen  
 CC for epitopes from the coding region of human ESO-1/CAG-3 ORF1 (see  
 CC AA585599). 30 Epitopes (see AAY06018-47) were identified. The present  
 CC peptide (ranked 15) corresponds to amino acid residues 159-167 of CAG-1  
 CC ORF1 (see AAY05965). CAG-1 is a new and potent tumour antigen capable of  
 CC eliciting an antigen specific immune response by T cells. Cancer peptides  
 CC (see AAY05967-87) derived from CAG-3, portions of CAG-3 and their  
 CC variants, are useful as cancer vaccines. A claimed method of preventing  
 CC or inhibiting cancer involves administering a cancer peptide, with or  
 CC without an HLA molecule. The cancer peptides form part of, or are derived  
 CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
 CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
 CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
 CC prostate, ovarian, pancreatic and thyroid cancers  
 CC  
 CC Sequence 9 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0

DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AA06032 (1-9)  
OY 528 TTGATGTCGATCAGCAGTCTTCTG 554  
Db 1 LeuWettrPlietnGlnCyspheu 9  
RESULT 313  
AA06033  
ID AA06033 standard; peptide; 9 AA.  
AC AA06033;  
XX 16-AUG-1999 (first entry)  
DT Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
DE  
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX MO9918206-A2.  
FN 15-APR-1999.  
PD 21-SEP-1998; 98WO-US019609.  
XX 08-OCT-1997; 97US-0061428P.  
PR (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PA Wang RF, Rosenberg SA;  
PI WPI; 1999-277270/23.  
XX  
DR Cancer antigen NY ESO1/CAG-3.  
PT  
XX Example 10; Page 43; 88pp; English.  
PS  
XX This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORP1 (see  
CC AA58599). 30 Epitopes (see AA06018-47) were identified. The present  
CC peptide (ranked 16) corresponds to amino acid residues 158-166 of CAG-1  
CC ORP1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AA05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
CC  
XX SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AA06033 (1-9)

OY 525 CTGTTGATGTCGATCAGCAGTCTT 551  
Db 1 LeuWettrPlietnGlnCysphe 9  
RESULT 314  
AA06047  
ID AA06047 standard; peptide; 9 AA.  
AC AA06047;  
XX 16-AUG-1999 (first entry)  
DT Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.  
DE  
XX NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;  
KW leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;  
KW metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;  
KW uterine cancer; breast cancer; prostate cancer; ovarian cancer;  
KW cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;  
KW liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;  
KW vaccine; human leukocyte antigen; HLA.  
XX  
OS Homo sapiens.  
XX MO9918206-A2.  
FN 15-APR-1999.  
PD 21-SEP-1998; 98WO-US019609.  
XX 08-OCT-1997; 97US-0061428P.  
PR (USSH ) US DEPT HEALTH & HUMAN SERVICES.  
XX  
PA Wang RF, Rosenberg SA;  
PI WPI; 1999-277270/23.  
XX  
DR Cancer antigen NY ESO1/CAG-3.  
PT  
XX Example 10; Page 43; 88pp; English.  
PS  
XX This peptide was identified as an HLA peptide motif following a screen  
CC for epitopes from the coding region of human ESO-1/CAG-3 ORP1 (see  
CC AA58599). 30 Epitopes (see AA06018-47) were identified. The present  
CC peptide (ranked 30) corresponds to amino acid residues 69-77 of CAG-1  
CC ORP1 (see AA05965). CAG-1 is a new and potent tumour antigen capable of  
CC eliciting an antigen specific immune response by T cells. Cancer peptides  
CC (see AA05967-87) derived from CAG-3, portions of CAG-3 and their  
CC variants, are useful as cancer vaccines. A claimed method of preventing  
CC or inhibiting cancer involves administering a cancer peptide, with or  
CC without an HLA molecule. The cancer peptides form part of, or are derived  
CC from, cancers such as primary or metastatic melanoma, thymoma, lymphoma,  
CC sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical  
CC cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast,  
CC prostate, ovarian, pancreatic and thyroid cancers  
CC  
XX SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AA06047 (1-9)  
OY 258 GCTTCAGGCTGATGATGCTGCTG 284  
Db 1 AlaSerglyLeuAenglyCysysarg 9

```

RESULT 315
AAV01763
ID AAV01763 standard; peptide; 9 AA.
XX
XX
AC AAV01763;
XX
XX
DT 25-JUN-1999 (first entry)
XX
DE Exemplary antigenic peptide derived from NY-ESO-1.
XX
XX
KM MAGE-3; tumour associated gene; human leucocyte antigen Class II;
KM autologous CD4+ cell; MAGE-3 related disease; cancer; melanoma;
KM osteosarcoma; leukemia; carcinoma.
XX
XX
OS Homo sapiens.
XX
XX
PN WO9114326-A1.
XX
XX
PD 25-MAR-1999.
XX
XX
PF 04-SEP-1998; 98WO-US018601.
XX
XX
PR 12-SEP-1997; 97US-00928615.
XX
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
XX
PA (UYVR-) UNIV VRIJE BRUSSEL.
XX
XX
PI Thielemans K, Heirman C, Corthals J, Chaux P, Stroobant V;
PI Boon-Falleur T, Van Der Bruggen P, Luiten R;
XX
XX
DR WPI; 1999-244031/20.
XX
XX
PT Isolated peptides that bind to human leucocyte antigen class II
XX
XX
PT molecules.
XX
XX
PS Disclosure; Page 29; 88pp; English.
XX
XX
CC The present sequence represents an exemplary tumour associated peptide
CC antigen. The specification describes a MAGE-3 tumour associated gene.
CC Peptides (AAV01721-25) that bind human leucocyte antigen (HLA) Class II
CC molecules can be derived from the MAGE-3 protein. These peptides and
CC autologous CD4+ cells that bind to a complex of MAGE-3 peptide and HLA
CC Class II, are used to treat MAGE-3 related diseases, particularly cancers
CC (e.g. melanoma, osteosarcoma, leukemia and various forms of carcinoma).
CC The peptides are also used to produce specific antibodies. Detection of
CC of the peptides, e.g. in binding assays, particularly with antibodies, is
CC used for diagnosis of such diseases
XX
XX
SQ Sequence 9 AA;
XX
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
XX
XX
US-10-023-182-1 (1-752) x AAV01763 (1-9)
XX
XX
OY 516 CAGCTTTCCTGGTGGATGATGCAGC 542
DB 1 GlnLeuSerLeuMetTrpIleThr 9
XX
XX
RESULT 316
AAV01762
ID AAV01762 standard; peptide; 9 AA.
XX
XX
AC AAV01762;
XX
XX
DT 25-JUN-1999 (first entry)
XX
XX
DE Exemplary antigenic peptide derived from NY-ESO-1.

```

```

XX
XX
KM MAGE-3; tumour associated gene; human leucocyte antigen Class II;
KM autologous CD4+ cell; MAGE-3 related disease; cancer; melanoma;
KM osteosarcoma; leukemia; carcinoma.
XX
XX
OS Homo sapiens.
XX
XX
PN WO9114326-A1.
XX
XX
PD 25-MAR-1999.
XX
XX
PF 04-SEP-1998; 98WO-US018601.
XX
XX
PR 12-SEP-1997; 97US-00928615.
XX
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
XX
PA (UYVR-) UNIV VRIJE BRUSSEL.
XX
XX
PI Thielemans K, Heirman C, Corthals J, Chaux P, Stroobant V;
PI Boon-Falleur T, Van Der Bruggen P, Luiten R;
XX
XX
DR WPI; 1999-244031/20.
XX
XX
PT Isolated peptides that bind to human leucocyte antigen class II
XX
XX
PT molecules.
XX
XX
PS Disclosure; Page 29; 88pp; English.
XX
XX
CC The present sequence represents an exemplary tumour associated peptide
CC antigen. The specification describes a MAGE-3 tumour associated gene.
CC Peptides (AAV01721-25) that bind human leucocyte antigen (HLA) Class II
CC molecules can be derived from the MAGE-3 protein. These peptides and
CC autologous CD4+ cells that bind to a complex of MAGE-3 peptide and HLA
CC Class II, are used to treat MAGE-3 related diseases, particularly cancers
CC (e.g. melanoma, osteosarcoma, leukemia and various forms of carcinoma).
CC The peptides are also used to produce specific antibodies. Detection of
CC of the peptides, e.g. in binding assays, particularly with antibodies, is
CC used for diagnosis of such diseases
XX
XX
SQ Sequence 9 AA;
XX
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
XX
XX
US-10-023-182-1 (1-752) x AAV01762 (1-9)
XX
XX
OY 522 TCCCGTGGATGGATCAGCAGTGC 548
DB 1 SerLeuLeuMetTrpIleThrGlnCys 9
XX
XX
RESULT 317
AAV52433
ID AAV52433 standard; peptide; 9 AA.
XX
XX
AC AAV52433;
XX
XX
DT 15-FEB-2000 (first entry)
XX
XX
DE Human tumour antigen NY-ESO-1 peptide #6.
XX
XX
KM Cancer; tumour; antigen; MHC; major histocompatibility complex; Class I;
KM T-cell; cytotoxic; stimulation; proliferation; treatment; diagnosis;
KM prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;
KM hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
XX
XX
OS Synthetic.
XX
XX
OS Homo sapiens.

```



PN MO9953938-A1.  
XX 28-OCT-1999.  
PD 28-OCT-1999.  
XX 24-MAR-1999; 99WO-US0006875.  
PF 17-APR-1998; 98US-00062422.  
PR 02-OCT-1998; 98US-00165546.  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
PI Gure A, Ritter G;  
XX WPI: 2000-038483/03.  
DR Novel peptides which bind to MHC class I and MHC class II molecules,  
XX useful for therapeutic and diagnostic purposes.  
PT Claim 60; Page 18; 49pp; English.  
PS Peptides #4-#7 (AAV52431-Y52434) are peptides derived from the human  
XX tumour antigen, NY-ESO-1 (AAV52430) which contain the motif LLMWIT  
CC (AAV52441). These sequences can bind to MHC (major histocompatibility  
CC Class I HLA-A2 molecules, thereby stimulating proliferation of cytotoxic  
CC T-cells. cDNA encoding NY-ESO-1 was initially isolated from an oesophagus  
CC squamous cell cancer cDNA library. Tissue localisation studies revealed  
CC it to be expressed at high levels in normal ovary and testis but not in  
CC normal colon, kidney, liver, brain, oesophagus and skin. It was expressed  
CC in certain tumours and tumour cell lines with some degree of frequency -  
CC these included melanoma specimens and cell lines, and breast and bladder  
CC cancer specimens, with expression in other tumour types being sporadic.  
CC These NY-ESO-1-derived peptides may be used in methods and compositions  
CC used for the treatment, diagnosis and prevention of cancers (such as  
CC melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian  
CC cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the  
XX proliferation of T cells  
XX SQ Sequence 9 AA:  
US-10-023-182-1 (1-752) x AAV52433 (1-9)  
OY 516 CAGCTTCCCTGGATGATGATCG 542  
DB 1 GlnLeuSerLeuLeuMetTrpIleThr 9  
RESULT 318  
AAV52432  
ID AAV52432 standard; peptide; 9 AA.  
AC AAV52432;  
XX 15-FEB-2000 (first entry)  
DT Human tumour antigen NY-ESO-1 peptide #5.  
DE  
XX Cancer: tumour; antigen; MHC; major histocompatibility complex; Class I;  
KW T-cell; cytotoxic; stimulation; proliferation; treatment; diagnosis;  
KW prevention; melanoma; breast cancer; ovarian cancer; prostate cancer;  
KW hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.  
XX Synthetic.  
OS Homo sapiens.  
XX MO9953938-A1.  
PN

XX 28-OCT-1999.  
PD 28-OCT-1999.  
XX 24-MAR-1999; 99WO-US0006875.  
PF 17-APR-1998; 98US-00062422.  
PR 02-OCT-1998; 98US-00165546.  
XX (LUDW-) LUDWIG INST CANCER RES.  
PA Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
PI Gure A, Ritter G;  
XX WPI: 2000-038483/03.  
DR Novel peptides which bind to MHC class I and MHC class II molecules,  
XX useful for therapeutic and diagnostic purposes.  
PT Claim 60; Page 18; 49pp; English.  
PS Peptides #4-#7 (AAV52431-Y52434) are peptides derived from the human  
XX tumour antigen, NY-ESO-1 (AAV52430) which contain the motif LLMWIT  
CC (AAV52441). These sequences can bind to MHC (major histocompatibility  
CC Class I HLA-A2 molecules, thereby stimulating proliferation of cytotoxic  
CC T-cells. cDNA encoding NY-ESO-1 was initially isolated from an oesophagus  
CC squamous cell cancer cDNA library. Tissue localisation studies revealed  
CC it to be expressed at high levels in normal ovary and testis but not in  
CC normal colon, kidney, liver, brain, oesophagus and skin. It was expressed  
CC in certain tumours and tumour cell lines with some degree of frequency -  
CC these included melanoma specimens and cell lines, and breast and bladder  
CC cancer specimens, with expression in other tumour types being sporadic.  
CC These NY-ESO-1-derived peptides may be used in methods and compositions  
CC used for the treatment, diagnosis and prevention of cancers (such as  
CC melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian  
CC cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the  
XX proliferation of T cells  
XX SQ Sequence 9 AA:  
US-10-023-182-1 (1-752) x AAV52432 (1-9)  
OY 522 TCCCTGGATGATGATGATCG 548  
DB 1 SerLeuLeuMetTrpIleThrGlnCys 9  
RESULT 319  
AAB22791  
ID AAB22791 standard; peptide; 9 AA.  
AC AAB22791;  
XX 22-DEC-2000 (first entry)  
DT NY-ESO-1 peptide epitope, SEQ ID NO:2.  
DE  
XX NY-ESO-1; epitope; CTL response; cytotoxic T lymphocyte; vaccine;  
KW immunogenic; adjuvant coadministration; microbial infection;  
KW tuberculosis; HIV; hepatitis B virus; hepatitis C virus; cancer.  
XX Unidentified.  
OS  
XX WO200048630-A1.  
XX 24-AUG-2000.  
XX

PF 17-FEB-2000; 2000WO-AU000110.  
 XX  
 XX 17-FEB-1999; 99AU-00008735.  
 PR 27-JUL-1999; 99AU-00001861.  
 XX  
 XX (CSLC-) CSL LTD.  
 PA  
 PI Cox JC, Drane DP;  
 XX  
 XX WPI; 2000-571930/53.  
 DR  
 XX Immunogenic complexes comprising negatively charged organic carrier  
 PT adjuvants and positively charged antigens for use as vaccines against  
 PT microbial infection and cancer.  
 XX  
 XX Example 4; Fig 5c; 11pp; English.  
 PS  
 XX The invention relates to a novel immunogenic complex comprising a charged  
 CC organic carrier and a charged antigen which are electrostatically  
 CC associated. The complex induces a cytotoxic T lymphocyte (CTL) response.  
 CC The complex and/or vaccine can be used to treat a disease in a mammal,  
 CC where the complex/vaccine elicits, induces or otherwise facilitates an  
 CC immune response which inhibits, halts, delays or prevents the onset or  
 CC progression of the disease condition. In particular, the disease is a  
 CC condition resulting from a microbial infection or cancer. Microbial  
 CC infections which may be treated using the immunogenic complex include  
 CC human immunodeficiency virus (HIV), hepatitis B, hepatitis C,  
 CC tuberculosis or a parasitic condition, and cancers which may be treated  
 CC include melanoma, prostate cancer or breast cancer. The complexes and  
 CC vaccines simultaneously co-deliver antigen and adjuvant to the same  
 CC antigen presenting cell, which is often essential for induction of  
 CC appropriate immune responses. Sequences AAB22790-B22791 represent peptide  
 CC epitopes of the positively charged protein NY-ESO-1 used in an  
 CC exemplification of the invention  
 XX  
 SQ Sequence 9 AA;  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAB22791 (1-9)  
 QY 522 TCCCTGATGTCGATCGACGAGTCG 548  
 ID AAY70857 standard; peptide; 9 AA.  
 XX AAY70857;  
 AC  
 XX 31-JUL-2000 (first entry)  
 DT  
 XX  
 XX CAMEL10 immunogenic peptide of human CAMEL protein.  
 DE  
 XX CAMEL; CTL-recognised Antigen on Melanoma; cytotoxic T lymphocyte; CTL;  
 KW tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;  
 KW cancer; immunotherapy; immunogenic peptide; immune response.  
 XX  
 OS Homo sapiens.  
 XX  
 XX WO200023584-A1.  
 PN  
 XX 27-APR-2000.  
 PD  
 XX 15-OCT-1999; 99WO-EP007832.  
 PF  
 XX

PR 16-OCT-1998; 98EP-00119583.  
 XX  
 XX (BOEH ) BOEHRINGER INGELHEIM INT GMBH.  
 PA (UHO-) UNIV HOSPITAL LEIDEN.  
 XX  
 XX Schrier PI, Aarnoudse CA, Heider K, Klade C;  
 PI  
 DR WPI; 2000-339685/29.  
 XX  
 XX Tumor-associated antigen useful for cancer immunotherapy is encoded by  
 PT the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.  
 XX  
 XX Claim 6; Page 34; 73pp; English.  
 PS  
 XX The present sequence is an immunogenic peptide CAMEL 10, of the human  
 CC tumour-associated antigen CAMEL (Cytotoxic T lymphocytes (CTL)-recognised  
 CC antigen on Melanoma). This peptide has the potential to bind to HLA-A2  
 CC and corresponds to residues 10-18 of the CAMEL protein. The CAMEL protein  
 CC is encoded by the LAGE-1 gene, a tumour-specific antigen. It is different  
 CC from the LAGE-1 protein, since it is translated from a different open  
 CC reading frame (ORF-1). It shows strong homology with NY-ESO-1, a melanoma  
 CC specific tumour antigen. The tumour-associated antigen displayed on  
 CC melanoma cells is recognised by cytotoxic T lymphocytes. CAMEL is  
 CC expressed in tumour cell lines, tumour tissues (e.g. breast and lung) and  
 CC in restricted number of healthy tissues. This sequence has anticancer  
 CC activity. CAMEL tumour antigen and immunogenic peptides derived from it  
 CC are useful for cancer immunotherapy. They have the potential to induce an  
 CC immune response, by eliciting a CTL response. The DNA molecule is used to  
 CC construct recombinant or fusion proteins  
 XX  
 SQ Sequence 9 AA;  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAY70857 (1-9)  
 QY 121 TTCTGATGCGCCGAGGGGCAATGCTG 147  
 DB 1 PheUwMetaIaGInGlyAlaMeUeu 9  
 RESULT 321  
 AAY70859  
 ID AAY70859 standard; peptide; 9 AA.  
 XX AAY70859;  
 AC  
 XX 31-JUL-2000 (first entry)  
 DT  
 XX  
 XX CAMEL17 immunogenic peptide of human CAMEL protein.  
 DE  
 XX CAMEL; CTL-recognised Antigen on Melanoma; cytotoxic T lymphocyte; CTL;  
 KW tumour-associated antigen; LAGE-1; NY-ESO-1; anticancer; melanoma; human;  
 KW cancer; immunotherapy; immunogenic peptide; immune response.  
 XX  
 OS Homo sapiens.  
 XX  
 XX WO200023584-A1.  
 PN  
 XX 27-APR-2000.  
 PD  
 XX 15-OCT-1999; 99WO-EP007832.  
 PF  
 XX 16-OCT-1998; 98EP-00119583.  
 PR  
 XX (BOEH ) BOEHRINGER INGELHEIM INT GMBH.  
 PA (UHO-) UNIV HOSPITAL LEIDEN.  
 XX

PI Schrier PI, Aarnoudse CA, Heider K, Klade C;  
XX  
DR WPI; 2000-339685/29.  
XX  
PT Tumor-associated antigen useful for cancer immunotherapy is encoded by  
XX the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.  
XX  
PS Claim 8; Page 34; 73pp; English.  
XX  
CC The present sequence is an immunogenic peptide CAMEL 17, of the human  
CC tumour-associated antigen CAMEL (cytotoxic T lymphocytes (CTL)-recognised  
CC antigen on melanoma). This peptide has the potential to bind to HLA-A2  
CC and corresponds to residues 17-25 of the CAMEL protein. The CAMEL protein  
CC is encoded by the LAGE-1 gene, a tumour-specific antigen. It is different  
CC from the LAGE-1 protein, since it is translated from a different open  
CC reading frame (ORF-1). It shows strong homology with NY-ESO-1, a melanoma  
CC specific tumour antigen. The tumour-associated antigen displayed on  
CC melanoma cells is recognised by cytotoxic T lymphocytes. CAMEL is  
CC expressed in tumour cell lines, tumour tissues (e.g. breast and lung) and  
CC in restricted number of healthy tissues. This sequence has anticancer  
CC activity. CAMEL tumour antigen and immunogenic peptides derived from it  
CC are useful for cancer immunotherapy. They have the potential to induce an  
CC immune response, by eliciting a CTL response. The DNA molecule is used to  
CC construct recombinant or fusion proteins  
SQ  
Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY70859 (1-9)  
OY 142 ATGCTGGCGCCAGAGAGGCGGCTG 168  
Db 1 MetLeuAlaAlaGlnGlnIuAtrGrVal 9  
RESULT 322  
AAY79749  
ID AAY79749 standard; peptide; 9 AA.  
XX  
AC AAY79749;  
XX  
DT 10-MAY-2000 (first entry)  
XX  
DE NY-ESO-1 derived peptide #5.  
XX  
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
KW melanoma; synovial sarcoma.  
XX  
OS Homo sapiens.  
XX  
PN WO200000824-A1.  
XX  
PD 06-JAN-2000.  
XX  
PE 25-JUN-1999; 99WO-US014493.  
XX  
PR 26-JUN-1998; 98US-00105839.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Tureci O, Sahin U, Pfeundschn M, Rammensee G, Stevanovic S;  
PI Chen Y, Gure A, Old LJ;  
XX WPI; 2000-170933/15.  
XX  
PT Determining the possible presence of breast, endometrial, colorectal,

PT lung, bladder or head-neck cancer.  
XX  
XX Example 13; Page 26; 40pp; English.  
XX  
CC A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AA288452 to AA288465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention  
SQ  
Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY79749 (1-9)  
OY 72 GGCACAGGGGTTGACGGCGGATGCT 98  
Db 1 GlyThrGlyGlySerTnGlyAspAla 9  
RESULT 323  
AAY79748  
ID AAY79748 standard; peptide; 9 AA.  
XX  
AC AAY79748;  
XX  
DT 10-MAY-2000 (first entry)  
XX  
DE NY-ESO-1 derived peptide #4.  
XX  
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
KW melanoma; synovial sarcoma.  
XX  
OS Homo sapiens.  
XX  
PN WO200000824-A1.  
XX  
PD 06-JAN-2000.  
XX  
PE 25-JUN-1999; 99WO-US014493.  
XX  
PR 26-JUN-1998; 98US-00105839.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Tureci O, Sahin U, Pfeundschn M, Rammensee G, Stevanovic S;  
PI Chen Y, Gure A, Old LJ;  
XX WPI; 2000-170933/15.  
XX  
DR  
XX

PT Determining the possible presence of breast, endometrial, colorectal,  
lung, bladder or head-neck cancer.

PS Example 13; Page 26; 40pp; English.

XX A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AA288452 to AA288465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention

CC Sequence 9 AA;

SQ

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
Gaps: 0  
DB: 1

US-10-023-182-1 (1-752) x AAY79748 (1-9)

QY 495 TCATCATGCTCTGTTCTCCAGACGCTT 521

DB 1 SerIleSerSerCysIeuGInGInIeu 9

RESULT 324

AA79750  
ID AAY79750 standard; peptide; 9 AA.

AC AAY79750;

DT 10-MAY-2000 (first entry)

DE NY-ESO-1 derived peptide #6.

XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
XX HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
XX melanoma; synovial sarcoma.

KW Homo sapiens.

OS WO200000824-A1.

PN 06-JAN-2000.

PD 25-JUN-1999; 99WO-US014493.

PF 26-JUN-1998; 98US-00105839.

PR (LUDW-) LUDWIG INST CANCER RES.

PA Tureci O, Sahin U, Pfeundschnub M, Rammensee G, Stevanovic S;

PI Chen Y, Gure A, Old LJ;

PI WPI; 2000-170933/15.

XX Determining the possible presence of breast, endometrial, colorectal,  
PT lung, bladder or head-neck cancer.

XX Example 13; Page 26; 40pp; English.

XX A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AA288452 to AA288465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention

CC Sequence 9 AA;

SQ

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
Gaps: 0  
DB: 1

US-10-023-182-1 (1-752) x AAY79750 (1-9)

QY 207 AGGCGCTCGGAGCGGAGAGCGCC 233

DB 1 ArgAlaSerGlyProGlyGlyAla 9

RESULT 325

AA79755  
ID AAY79755 standard; peptide; 9 AA.

AC AAY79755;

DT 10-MAY-2000 (first entry)

DE NY-ESO-1 derived peptide #11.

XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
XX HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
XX melanoma; synovial sarcoma.

KW Homo sapiens.

OS WO200000824-A1.

PN 06-JAN-2000.

PD 25-JUN-1999; 99WO-US014493.

PF 26-JUN-1998; 98US-00105839.

PR (LUDW-) LUDWIG INST CANCER RES.

PA Tureci O, Sahin U, Pfeundschnub M, Rammensee G, Stevanovic S;

PI Chen Y, Gure A, Old LJ;

PI

DR WPI; 2000-170933/15.  
XX  
XX Determining the possible presence of breast, endometrial, colorectal,  
PT lung, bladder or head-neck cancer.  
XX  
XX Example 13; Page 26; 40pp; English.  
XX  
XX A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention  
XX  
XX Sequence 9 AA;  
SQ  
XX  
XX Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY79755 (1-9)  
QY 516 CAGCTTTCCTGTGATGATGATCAG 542  
DB 1 GlnLeuSerLeuLeuMetTriplethr 9  
RESULT 326  
AAY79757  
ID AAY79757 standard; peptide; 9 AA.  
XX  
XX AAY79757;  
XX  
XX 10-MAY-2000 (first entry)  
XX  
XX NY-ESO-1 derived peptide #13.  
XX  
XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
KW melanoma; synovial sarcoma.  
XX  
XX Homo sapiens.  
XX OS  
XX WO200000824-A1.  
XX PN  
XX 06-JAN-2000.  
XX PD  
XX 25-JUN-1999; 99WO-US014493.  
XX PF  
XX 26-JUN-1998; 98US-00105839.  
XX PR  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX PA  
XX Tureci O, Sahin U, Pfeundschnub M, Rammensee G, Stevanovic S;  
PI Chen Y, Gure A, Old LJ;

XX  
XX WPI; 2000-170933/15.  
XX  
XX Determining the possible presence of breast, endometrial, colorectal,  
PT lung, bladder or head-neck cancer.  
XX  
XX Example 13; Page 26; 40pp; English.  
XX  
XX A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention  
XX  
XX Sequence 9 AA;  
SQ  
XX  
XX Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY79757 (1-9)  
QY 339 TTCGCGACCCCATGAGCAGCTG 365  
DB 1 PheAlaThrProMetGluAlaGluIleu 9  
RESULT 327  
AAY79753  
ID AAY79753 standard; peptide; 9 AA.  
XX  
XX AAY79753;  
XX  
XX 10-MAY-2000 (first entry)  
XX  
XX NY-ESO-1 derived peptide #9.  
XX  
XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
KW melanoma; synovial sarcoma.  
XX  
XX Homo sapiens.  
XX OS  
XX WO200000824-A1.  
XX PN  
XX 06-JAN-2000.  
XX PD  
XX 25-JUN-1999; 99WO-US014493.  
XX PF  
XX 26-JUN-1998; 98US-00105839.  
XX PR  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX PA  
XX Tureci O, Sahin U, Pfeundschnub M, Rammensee G, Stevanovic S;  
PI

PI Chen Y, Gure A, Old LJ;  
XX  
XX WPI; 2000-170933/15.  
XX

PT Determining the possible presence of breast, endometrial, colorectal,  
lung, bladder or head-neck cancer.  
XX

PS Example 13; Page 26; 40pp; English.  
XX

CC A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention  
CC  
SQ Sequence 9 AA;

#### Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAY79753 (1-9)

OY 429 TTCACTGTCTCGGCAACTACTGACT 455  
DB 1 PheHrVaiSerGIyAsnIleLeuThr 9

#### RESULT 328

AAY79756  
ID AAY79756 standard; peptide; 9 AA.

AC AAY79756;

XX 10-MAY-2000 (first entry)

DE NY-ESO-1 derived peptide #12.

XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;

KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostratic;  
melanoma; synovial sarcoma.

XX Homo sapiens.

OS WO200000824-A1.

PN 06-JAN-2000.

PD 25-JUN-1999; 99WO-US014493.

PF 26-JUN-1998; 98US-00105839.

PR (LUDW-) LUDWIG INST CANCER RES.  
XX

PI Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;  
XX Chen Y, Gure A, Old LJ;  
XX WPI; 2000-170933/15.  
XX

PT Determining the possible presence of breast, endometrial, colorectal,  
lung, bladder or head-neck cancer.  
XX

PS Example 13; Page 26; 40pp; English.  
XX

CC A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention  
CC  
SQ Sequence 9 AA;

#### Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAY79756 (1-9)

OY 528 TTGATGTGATCAGCAGCTTCTG 554  
DB 1 LeuMetTrpIleThrGlnCysPheLeu 9

#### RESULT 329

AAY78466  
ID AAY78466 standard; peptide; 9 AA.

AC AAY78466;

XX 10-MAY-2000 (first entry)

DE NY-ESO-1 derived HLA binding peptide #2.

XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;

KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostratic;  
melanoma; synovial sarcoma.

XX Homo sapiens.

OS WO200000824-A1.

PN 06-JAN-2000.

PD 25-JUN-1999; 99WO-US014493.

PF 26-JUN-1998; 98US-00105839.

PR (LUDW-) LUDWIG INST CANCER RES.  
XX

XX Tureci O, Sahin U, Pfeundschnuh M, Rammensee G, Stevanovic S;  
PI Chen Y, Gure A, Old LJ;  
XX WPI; 2000-170933/15.  
XX  
PT Determining the possible presence of breast, endometrial, colorectal,  
PT lung, bladder or head-neck cancer.  
XX  
PS Claim 34; Page 33; 40pp; English.  
XX  
CC A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AA288452 to AA288465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY78466 (1-9)  
QY 375 AGCTGCCCGAGATGCCACCGCTT 401  
DB 1 SerLeuAlaGlnApeAlaProProLeu 9  
RESULT 330  
AAY79751  
ID AAY79751 standard; peptide; 9 AA.  
XX  
AC AAY79751;  
XX  
DT 10-MAY-2000 (first entry)  
XX  
DE NY-ESO-1 derived peptide #7.  
XX  
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
KW melanoma; synovial sarcoma.  
XX  
OS Homo sapiens.  
XX  
PN WO200000824-A1.  
XX  
PD 06-JAN-2000.  
XX  
PF 25-JUN-1999; 99WO-US014493.  
XX  
PR 26-JUN-1998; 98US-00105839.  
XX

PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Tureci O, Sahin U, Pfeundschnuh M, Rammensee G, Stevanovic S;  
PI Chen Y, Gure A, Old LJ;  
XX WPI; 2000-170933/15.  
XX  
PT Determining the possible presence of breast, endometrial, colorectal,  
PT lung, bladder or head-neck cancer.  
XX  
PS Example 13; Page 26; 40pp; English.  
XX  
CC A method has been developed for determining the possible presence of a  
CC cancer, which is not melanoma or synovial sarcoma. The method comprises  
CC assaying a sample taken from the subject to determine the expression of  
CC an SSX gene, and determining the expression as a determination of the  
CC possible presence of cancer. Expression of SSX1 gene indicates possible  
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck  
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
CC SSX2 gene expression additionally indicates possible presence of  
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
CC cancer. Determining expression of SSX gene can be used to monitor  
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
CC derived peptide complex stimulates proliferation of cytolytic T cells.  
CC This is useful for treating cancer, especially melanoma. AAY78464 to  
CC AAY78468 represent specifically claimed HLA binding peptides for use in  
CC the method of the invention. AA288452 to AA288465 represent PCR primers  
CC used in the isolation of SSX genes in the exemplification of the present  
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the  
CC exemplification of the present invention  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY79751 (1-9)  
QY 288 GGGGCCAGGGGGCCGAGAGCGGCTG 314  
DB 1 GlyAlaArgGlyProGlnSerArgLeu 9  
RESULT 331  
AAY79754  
ID AAY79754 standard; peptide; 9 AA.  
XX  
AC AAY79754;  
XX  
DT 10-MAY-2000 (first entry)  
XX  
DE NY-ESO-1 derived peptide #10.  
XX  
KW Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;  
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
KW melanoma; synovial sarcoma.  
XX  
OS Homo sapiens.  
XX  
PN WO200000824-A1.  
XX  
PD 06-JAN-2000.  
XX  
PF 25-JUN-1999; 99WO-US014493.  
XX  
PR 26-JUN-1998; 98US-00105839.  
XX

XX (LUDW-) LUDWIG INST CANCER RES.

XX PA Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;  
XX PI Chen Y, Gure A, Old LJ;  
XX PF WPI; 2000-170933/15.

XX DR WPI; 2000-170933/15.

XX PT Determining the possible presence of breast, endometrial, colorectal,  
XX PF lung, bladder or head-neck cancer.

XX PS Example 13; Page 26; 40pp; English.

XX A method has been developed for determining the possible presence of a  
XX cancer, which is not melanoma or synovial sarcoma. The method comprises  
XX assaying a sample taken from the subject to determine the expression of  
XX an SSX gene, and determining the expression as a determination of the  
XX possible presence of cancer. Expression of SSX1 gene indicates possible  
XX presence of breast, endometrial, colorectal, lung, bladder or head-neck  
XX cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
XX CC SSX2 gene expression additionally indicates possible presence of  
XX lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
XX SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
XX CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
XX cancer. Determining expression of SSX gene can be used to monitor  
XX progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
XX derived peptide complex stimulates proliferation of cytolytic T cells.  
XX This is useful for treating cancer, especially melanoma. AAY78464 to  
XX AAY78468 represent specifically claimed HLA binding peptides for use in  
XX the method of the invention. AA288452 to AA288465 represent PCR primers  
XX used in the isolation of SSX genes in the exemplification of the present  
XX invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
XX peptides derived from SSX proteins or NY-ESO-1, which are used in the  
XX exemplification of the present invention

XX SQ Sequence 9 AA;

XX Alignment Scores:

Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY79754 (1-9)

OY 462 CTGACTGCTGCAGACACCGCCACTG 488

Db 1 LeuThrAlaAlaAspHisArgGlnLeu 9

RESULT 332

AAY78471

ID AAY78471 standard; peptide; 9 AA.

AC AAY78471;

DT 10-MAY-2000 (first entry)

XX NY-ESO-1 derived peptide #3.

XX DE Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; NY-ESO-1;  
XX KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
XX KM melanoma; synovial sarcoma.

XX OS Homo sapiens.

XX PN WO200000824-A1.

XX PD 06-JAN-2000.

XX PF 25-JUN-1999; 99WO-US014493.

PR 26-JUN-1998; 98US-00105839.

XX (LUDW-) LUDWIG INST CANCER RES.

XX PA Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;  
XX PI Chen Y, Gure A, Old LJ;  
XX PF WPI; 2000-170933/15.

XX DR WPI; 2000-170933/15.

XX PT Determining the possible presence of breast, endometrial, colorectal,  
XX PF lung, bladder or head-neck cancer.

XX PS Example 12; Page 21; 40pp; English.

XX A method has been developed for determining the possible presence of a  
XX cancer, which is not melanoma or synovial sarcoma. The method comprises  
XX assaying a sample taken from the subject to determine the expression of  
XX an SSX gene, and determining the expression as a determination of the  
XX possible presence of cancer. Expression of SSX1 gene indicates possible  
XX presence of breast, endometrial, colorectal, lung, bladder or head-neck  
XX cancer. These cancers are also detected by SSX2 and SSX4 gene expression.  
XX CC SSX2 gene expression additionally indicates possible presence of  
XX lymphoma, renal cell cancer, glioma and prostate cancer. Expression of  
XX SSX4 gene also indicates possible presence of ovarian or stomach cancer.  
XX CC SSX5 gene expression indicates the same cancers as SSX1, except breast  
XX cancer. Determining expression of SSX gene can be used to monitor  
XX progress of melanoma or synovial sarcoma, which is not cancer. The SSX-  
XX derived peptide complex stimulates proliferation of cytolytic T cells.  
XX This is useful for treating cancer, especially melanoma. AAY78464 to  
XX AAY78468 represent specifically claimed HLA binding peptides for use in  
XX the method of the invention. AA288452 to AA288465 represent PCR primers  
XX used in the isolation of SSX genes in the exemplification of the present  
XX invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent  
XX peptides derived from SSX proteins or NY-ESO-1, which are used in the  
XX exemplification of the present invention

XX SQ Sequence 9 AA;

XX Alignment Scores:

Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAY78471 (1-9)

OY 516 CAGCTTTCCTGTGATGTGATCAG 542

Db 1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 333

AAY79758

ID AAY79758 standard; peptide; 9 AA.

AC AAY79758;

DT 10-MAY-2000 (first entry)

XX NY-ESO-1 derived peptide #14.

XX DE Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; NY-ESO-1;  
XX KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;  
XX KM melanoma; synovial sarcoma.

XX OS Homo sapiens.

XX PN WO200000824-A1.

XX PD 06-JAN-2000.

XX PF 25-JUN-1999; 99WO-US014493.



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XX 26-JUN-1998; 98US-00105839.
PR (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Tureci O, Sahin U, Pfeundschnub M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX MPI; 2000-170933/15.
DR
XX Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
XX Example 13; Page 26; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 9 AA;
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAY79758 (1-9)
OY 432 ACTGTCGGCAACATCTGACTATC 458
DB 1 ThrValISerGlyAsnIleLeuThrIle 9
RESULT 334
ID AAY78465 standard; peptide; 9 AA.
AC AAY78465;
XX
XX 10-MAY-2000 (first entry)
XX
XX NY-ESO-1 derived HLA binding peptide #1.
XX
XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
XX melanoma; synovial sarcoma.
XX
XX Homo sapiens.
XX
XX MO200000824-A1.
XX
XX 06-JAN-2000.
XX
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PF 25-JUN-1999; 99WO-US014493.
XX
XX 26-JUN-1998; 98US-00105839.
PR (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Tureci O, Sahin U, Pfeundschnub M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX MPI; 2000-170933/15.
DR
XX Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
XX
XX Claim 34; Page 33; 40pp; English.
XX
CC A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
XX
SQ Sequence 9 AA;
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAY78465 (1-9)
OY 309 CGCCTGCTTGAGTTCTTACCTGGCCTG 335
DB 1 ArgLeuLeuGluPheTyrLeuAlaMet 9
RESULT 335
ID AAY78470 standard; peptide; 9 AA.
AC AAY78470;
XX
XX 10-MAY-2000 (first entry)
XX
XX NY-ESO-1 derived peptide #2.
XX
XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KW HLA binding; human leukocyte antigen; cytolytic T cell; CTL; cytostatic;
XX melanoma; synovial sarcoma.
XX
XX Homo sapiens.
XX
XX MO200000824-A1.
XX
XX 06-JAN-2000.
XX
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XX 25-JUN-1999; 99WO-US014493.
PF
XX 26-JUN-1998; 98US-00105839.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX WPI; 2000-170933/15.
DR
XX
XX Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
PS Example 12; Page 21; 40pp; English.
XX
XX A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
CC
CC
CC Sequence 9 AA;
SQ
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAY78470 (1-9)
QY 522 TCCCTGTGATGTCAGTCAGAGTGC 548
DB 1 SerLeuLeuMetCripIeThrsInCys 9
RESULT 336
AAY79752
ID AAY79752 standard; peptide; 9 AA.
XX
XX AAY79752;
XX
XX 10-MAY-2000 (first entry)
DE NY-ESO-1 derived peptide #8.
XX
XX Cancer; SSX family; SSX-1; SSX-2; SSX-3; SSX-4; SSX-5; NY-ESO-1;
KM HLA binding; human leukocyte antigen; cytolitic T cell; CTL; cytosstatic;
XX melanoma; synovial sarcoma.
XX
XX Homo sapiens.
OS
XX
XX WO200000824-A1.
PN
XX
```

```
PD 06-JAN-2000.
XX
XX 25-JUN-1999; 99WO-US014493.
PF
XX 26-JUN-1998; 98US-00105839.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX Tureci O, Sahin U, Pfreundschuh M, Rammensee G, Stevanovic S;
PI Chen Y, Gure A, Old LJ;
XX WPI; 2000-170933/15.
DR
XX
XX Determining the possible presence of breast, endometrial, colorectal,
PT lung, bladder or head-neck cancer.
PS Example 13; Page 26; 40pp; English.
XX
XX A method has been developed for determining the possible presence of a
CC cancer, which is not melanoma or synovial sarcoma. The method comprises
CC assaying a sample taken from the subject to determine the expression of
CC an SSX gene, and determining the expression as a determination of the
CC possible presence of cancer. Expression of SSX1 gene indicates possible
CC presence of breast, endometrial, colorectal, lung, bladder or head-neck
CC cancer. These cancers are also detected by SSX2 and SSX4 gene expression.
CC SSX2 gene expression additionally indicates possible presence of
CC lymphoma, renal cell cancer, glioma and prostate cancer. Expression of
CC SSX4 gene also indicates possible presence of ovarian or stomach cancer.
CC SSX5 gene expression indicates the same cancers as SSX1, except breast
CC cancer. Determining expression of SSX gene can be used to monitor
CC progress of melanoma or synovial sarcoma, which is not cancer. The SSX-
CC derived peptide complex stimulates proliferation of cytolytic T cells.
CC This is useful for treating cancer, especially melanoma. AAY78464 to
CC AAY78468 represent specifically claimed HLA binding peptides for use in
CC the method of the invention. AAZ88452 to AAZ88465 represent PCR primers
CC used in the isolation of SSX genes in the exemplification of the present
CC invention. AAY78469 to AAY78500, and AAY79684 to AAY79762 represent
CC peptides derived from SSX proteins or NY-ESO-1, which are used in the
CC exemplification of the present invention
CC
CC
CC Sequence 9 AA;
SQ
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAY79752 (1-9)
QY 342 GCGACACCCATGAGAAAGCAGAGCTGCC 368
DB 1 AlaThrProMetGluAlaGlnLeuAla 9
RESULT 337
AAB02632
ID AAB02632 standard; peptide; 9 AA.
XX
XX AAB02632;
XX
XX 18-AUG-2000 (first entry)
DE Tumour associated peptide antigen from NY-ESO-1 #3.
XX
XX MAGE-A3; HLA class II; human leukocyte antigen; antibody; vaccine;
KM cancer; human; tumour; tumour associated gene product.
XX
XX Homo sapiens.
OS
XX
XX WO200020581-A1.
PN
XX
```

PD 13-APR-2000.

XX 15-SEP-1999; 99WO-US021230.

XX 05-OCT-1998; 98US-00166448.

XX (LUDW-) LUDWIG INST CANCER RES.

PA (UYVR-) UNIV VAUJE BRUSSEL.

PI Chaux P, Strobant V, Boon-Faljeur T, Van Der Bruggen P;

PI Schults ES, Van Snick J, Lethe B, Thielemans K, Corthals J;

PI Heirman C;

XX WPI; 2000-317713/27.

DR

XX New MAGE-A3 class II binding peptides, useful to diagnose and treat

PT tumours, are fragments of MAGE-A3 which bind to and are presented to T

PT lymphocytes by human leukocyte antigen class II molecules.

XX

PS Disclosure; Page 33; 11pp; English.

XX

XX The present invention relates to MAGE-A3 (tumour associated gene product)

CC human leukocyte antigen (HLA) class II-binding peptides (see AAB02566-

CC B02595, and AAB02633-B02637). These peptides are presented to T cells in

CC the context of HLA class II molecules. The peptides stimulate the

CC activity and proliferation of CD4+ T lymphocytes. The invention also

CC includes nucleotide sequences encoding MAGE-3A peptides (see AAA37928 and

CC AAA37938-A37940). The peptides and nucleotide sequences can be used to

CC create antibodies against the MAGE-A3 peptides, the antibodies, peptides

CC and nucleotide sequences can be used to create a vaccine. The peptides

CC are used to diagnose or treat a disorder characterized by expression of

CC MAGE-3, particularly cancer. The methods can also be used in the

CC diagnosis of disorders associated with MAGE-3 expression. Included in the

CC invention are other human tumour antigens (see AAB02596-B02637), and PCR

CC primers used in the course of the invention (see AAA37929-A37937 and

XX AAA37941-A37942)

XX

SQ Sequence 9 AA;

Alignment Scores:

Pred. No.: 816 Length: 9

Score: 9.00 Matches: 9

Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.00% Indels: 0

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB02632 (1-9)

QY 516 CAGCTTTCCTGTGATGTGATCAG 542

Db 1 GlnuSerleuenuetripIethr 9

RESULT 338

AAB02631

ID AAB02631 standard; peptide; 9 AA.

XX

XX AAB02631;

XX

XX 18-AUG-2000 (first entry)

XX

XX Tumour associated peptide antigen from NY-ESO-1 #2.

DE

XX

XX MAGE-A3; HLA class II; human leukocyte antigen; antibody; vaccine;

KW cancer; human; tumour; tumour associated gene product.

XX

XX Homo sapiens.

OS

XX W0200020581-A1.

PN

XX 13-APR-2000.

DD

XX 15-SEP-1999; 99WO-US021230.

PF

|    |   |                |                 |
|----|---|----------------|-----------------|
| XX | 05-OCT-1998,  | 98US-00166448. |                 |
| PR |   |                |                 |
| XX | (LUDWIG-) LUDWIG INST CANCER RES.   |                |                 |
| PA | (UUVV-) UNIV VRIJE BRUSSEL.   |                |                 |
| XX |   |                |                 |
| PI | Chaux P, Stroobant V, Boon-Fallier T, Van Der Bruggen P;                  |                |                 |
| PI | Schultz ES, Van Snick J, Lethe B, Thielemans K, Cortals J;                |                |                 |
| XX | Heirman C;  |                |                 |
| DR | WPI; 2000-317713/27.  |                |                 |
| XX |   |                |                 |
| PT | New MAGE-A3 class II binding peptides, useful to diagnose and treat       |                |                 |
| PT | tumors, are fragments of MAGE-A3 which bind to and are presented to T     |                |                 |
| PT | lymphocytes by human leukocyte antigen class II molecules.                |                |                 |
| XX |   |                |                 |
| PS | Disclosure; Page 33; 119pp; English.                                      |                |                 |
| XX |   |                |                 |
| CC | The present invention relates to MAGE-A3 (tumour associated gene product) |                |                 |
| CC | human leukocyte antigen (HLA) class II-binding peptides (see AAB02566-    |                |                 |
| CC | B02595, and AAB02633-B02637). These peptides are presented to T cells in  |                |                 |
| CC | the context of HLA class II molecules. The peptides stimulate the         |                |                 |
| CC | activity and proliferation of CD4+ T lymphocytes. The invention also      |                |                 |
| CC | includes nucleotide sequences encoding MAGE-3a peptides (see AAB37928 and |                |                 |
| CC | AAB37938-A37940). The peptides and nucleotide sequences can be used to    |                |                 |
| CC | create antibodies against the MAGE-A3 peptides, the antibodies, peptides  |                |                 |
| CC | and nucleotide sequences can be used to create a vaccine. The peptides    |                |                 |
| CC | are used to diagnose or treat a disorder characterized by expression of   |                |                 |
| CC | MAGE-3, particularly cancer. The methods can also be used in the          |                |                 |
| CC | diagnosis of disorders associated with MAGE-3 expression. Included in the |                |                 |
| CC | invention are other human tumour antigens (see AAB02596-B02637), and PCR  |                |                 |
| CC | primers used in the course of the invention (see AAB37929-A37937 and      |                |                 |
| XX | AAB37941-A37942)  |                |                 |
| XX |   |                |                 |
| SQ | Sequence 9 AA;  |                |                 |
|    |   |                |                 |
|    | Alignment Scores:   |                |                 |
|    | Pred. No.:  | 816            | Length: 9       |
|    | Score:  | 9.00           | Matches: 9      |
|    | Percent Similarity:   | 100.00%        | Conservative: 0 |
|    | Best local Similarity:  | 100.00%        | Mismatches: 0   |
|    | Query Match:  | 5.00%          | Indels: 0       |
|    | DB:   | 1              | Gaps: 0         |
|    |   |                |                 |
|    | US-10-023-182-1 (1-752) x AAB02631 (1-9)                                  |                |                 |
| OY | 522 TCCCTGTGATGTCACGACAGTCC 548   |                |                 |
|    |   |                |                 |
| DB | 1 SerLeuLeuMetTrpIleThrGlnGly 9   |                |                 |
|    |   |                |                 |
|    | RESULT 339  |                |                 |
|    | AAB08703  |                |                 |
| ID | AAB08703 standard; peptide; 9 AA.   |                |                 |
| XX |   |                |                 |
| AC | AAB08703;   |                |                 |
| XX |   |                |                 |
| DT | 02-JAN-2001 (first entry)   |                |                 |
| XX |   |                |                 |
| DE | Antigenic peptide from tumour rejection antigen NY-ESO-1.                 |                |                 |
| XX |   |                |                 |
| KW | EphA3; HLA class II-binding peptide; human leukocyte antigen; antigen;    |                |                 |
| KW | CD4+ T lymphocyte; tumour associated gene; vaccine.                       |                |                 |
| XX |   |                |                 |
| OS | Homo sapiens.   |                |                 |
| XX |   |                |                 |
| FN | WO2000050589-A1.  |                |                 |
| XX |   |                |                 |
| PD | 31-AUG-2000.  |                |                 |
| XX |   |                |                 |
| PF | 18-FEB-2000; 2000WO-US004326.   |                |                 |
| XX |   |                |                 |
| PR | 22-FEB-1999; 99US-0121170P.   |                |                 |
| PR | 08-OCT-1999; 99US-0158566P.   |                |                 |

```
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX Chiari R, Coulie P, Boon-Falleur T;
PI
XX WPI; 2000-572089/53.
DR
XX
XX Novel tyrosine kinase receptor, EphA3 human leukocyte antigen (HLA) class
PT II binding peptide and nucleic acid encoding the receptor, useful for
PR diagnosing and treating conditions characterized by expression of EphA3
PT gene.
XX
XX Disclosure; Page 36; 107pp; English.
PS
XX AAB08668-B08704 represent antigenic peptides characteristic of tumours.
CC The peptides may be combined in vaccines with a human EphA3 HLA (human
CC leukocyte antigen) class II-binding peptide. EphA3 antigens, when
CC presented by an antigen presenting cell having a HLA class II molecule,
CC effectively induce activation and proliferation of CD4+ T lymphocytes.
CC EphA3 is a tumour associated gene. EphA3 HLA binding peptides are used
CC for selectively enriching a population of T lymphocytes. The peptides are
CC also used for diagnosing a disorder characterized by EphA3 or EphA3 HLA
CC binding peptide expression. The peptides are also used to treat a
CC disorder characterized by EphA3 expression. The EphA3 binding peptides
CC are useful in producing vaccines and antibody
CC
XX Sequence 9 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB08703 (1-9)
OY 522 TCCTGTGATGTGATCAGCAGTGC 548
DB 1 SerLeuLeuMetTrpIleThrIleCys 9
RESULT 340
AAB08704
ID AAB08704 standard; peptide; 9 AA.
XX
XX AAB08704;
AC
XX 02-JAN-2001 (first entry)
DT
XX Antigenic peptide from tumour rejection antigen NY-ESO-1.
DE
XX EphA3; HLA class II-binding peptide; human leukocyte antigen; antigen;
KM CD4+ T lymphocyte; tumour associated gene; vaccine.
XX
XX Homo sapiens.
OS
XX WO200050589-A1.
PN
XX 31-AUG-2000.
PD
XX 18-FEB-2000; 2000WO-US004326.
PF
XX 22-FEB-1999; 99US-0121170P.
PR 08-OCT-1999; 99US-0158566P.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX Chiari R, Coulie P, Boon-Falleur T;
PI
XX WPI; 2000-572089/53.
DR
XX Novel tyrosine kinase receptor, EphA3 human leukocyte antigen (HLA) class
```

```
PT II binding peptide and nucleic acid encoding the receptor, useful for
PT diagnosing and treating conditions characterized by expression of EphA3
PT gene.
XX
XX Disclosure; Page 36; 107pp; English.
PS
XX AAB08668-B08704 represent antigenic peptides characteristic of tumour.
CC The peptides may be combined in vaccines with a human EphA3 HLA (human
CC leukocyte antigen) class II-binding peptide. EphA3 antigens, when
CC presented by an antigen presenting cell having a HLA class II molecule,
CC effectively induce activation and proliferation of CD4+ T lymphocytes.
CC EphA3 is a tumour associated gene. EphA3 HLA binding peptides are used
CC for selectively enriching a population of T lymphocytes. The peptides are
CC also used for diagnosing a disorder characterized by EphA3 or EphA3 HLA.
CC binding peptide expression. The peptides are also used to treat a
CC disorder characterized by EphA3 expression. The EphA3 binding peptides
CC are useful in producing vaccines and antibody
CC
XX Sequence 9 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB08704 (1-9)
OY 516 CAGCTTCCCTGTGATGTGATCAGC 542
DB 1 GlnSerLeuLeuMetTrpIleThr 9
RESULT 341
AAM99363
ID AAM99363 standard; peptide; 9 AA.
XX
XX AAM99363;
AC
XX 07-DEC-2001 (first entry)
DT
XX Vaccine related MHC ligand peptide SEQ ID NO:466.
DE
XX Glutamic acid; glutamine; vaccine; major histocompatibility complex; MHC;
KM immunomodulator; antiallergic; endocrine; neuroprotectant; virucidal;
KM bactericidal; antiparasitic; fungicidal; cytostatic; medicine;
KM pharmaceutical; immune disorder; immune deficiency; autoimmune;
KM hypersensitivity; allergy; graft rejection; infection; hormonal disorder;
KM central nervous system disease; cancer; melanoma; anti-melanoma vaccine;
KM human immunodeficiency virus.
XX
XX Homo sapiens.
OS
XX WO200170772-A2.
PN
XX 27-SEP-2001.
PD
XX 22-MAR-2001; 2001WO-FR000872.
PF
XX 23-MAR-2000; 2000FR-00003711.
PR
XX (FABR ) FABRE MEDICAMENT SA PIERRE.
PA
XX Klinguer-Hamouir C, Corvaia N, Beck A, Goetsch L;
PI
XX WPI; 2001-611470/70.
DR
XX Stabilized pharmaceutical containing N-terminal glutamic acid or
PT glutamine, useful e.g. in anti-melanoma vaccines, is an addition salt
PT with strong acid.
PS Claim 9; Page 111; 149pp; French.
```

XX The present invention describes a pharmaceutical compound (I) that  
CC contains an N-terminal glutamic acid (Glu) or glutamine (Gln) residue in  
CC the form of an addition salt with a strong, physiologically acceptable  
CC acid (II). Also described are: (a) a pharmaceutical composition  
CC containing at least one (I); (b) a vaccine containing at least one (I)  
CC where this is a major histocompatibility complex (MHC) ligand (Ia); (c) a  
CC method for in vitro diagnosis of diseases associated with the presence of  
CC (Ia); (d) a kit for method (c) that includes a (Ia); and (e) a process  
CC for preparing (I). (I) has immunomodulator, endocrine, anti-allergic,  
CC neuroprotectant, virucidal, bactericidal, antiparasitic, fungicidal and  
CC cytostatic activities. (I) are useful, in human or veterinary medicine,  
CC in pharmaceutical compositions (for treating immune disorders, e.g.  
CC immune deficiency, autoimmune states, hypersensitivity, allergy, graft  
CC rejection, infection, hormonal disorders and central nervous system  
CC diseases), also, where (I) is a MHC ligand (Ia), in vaccines for  
CC treatment or prevention of: (1) viral, bacterial, parasitic or fungal  
CC infections; or (11) of cancers. A particular application is in anti-  
CC melanoma vaccines. (I) are also useful for in vitro diagnosis of diseases  
CC associated with interactions between MHC and (I), e.g. melanoma and human  
CC immunodeficiency virus infection. AAM98898 to AAM99593 represent peptides  
CC which can be used in pharmaceutical compounds from the present invention  
XX  
SQ Sequence 9 AA:  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAM99363 (1-9)  
QY 516 CAGCTTTCCTGTGATGTGATCAGC 542  
Db 1 GlnLeuSerLeuLeuMetTrpIleThr 9  
RESULT 342  
AAE02120  
ID AAE02120 standard; peptide; 9 AA.  
XX  
AC AAE02120;  
XX  
DT 31-JUL-2001 (first entry)  
XX  
DE NY-ESO-1 human leukocyte antigen-A2-binding peptide #2.  
XX  
KW Human; cytostatic; immunogen; NY-ESO-1; human leukocyte antigen; HLA;  
KW CDB; cytotoxic T lymphocyte; cancer; carcinoma; melanoma; myeloma;  
KW brain tumour; sarcoma; vaccine; gene therapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200129220-A2.  
XX  
PD 26-APR-2001.  
XX  
PF 19-OCT-2000; 2000WO-US028852.  
XX  
PR 19-OCT-1999; 99US-0160374P.  
PR 01-FEB-2000; 2000US-0179570P.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Heidecker L, Van Den Eynde B, Boon-Falleur T, Brasseur F;  
XX  
DR WPI; 2001-328498/34.  
XX  
PT New antigenic peptides derived from MAGE-A12 polypeptides, useful for  
PT diagnosis and treatment of cancer, such as bladder, lung, breast, brain,  
PT prostate and renal carcinomas.

XX  
PS Disclosure; Page 21; 69pp; English.  
XX  
CC The patent discloses antigenic peptides derived from MAGE-A12 protein and  
CC presented by human leukocyte antigens (HLA). These antigenic peptides  
CC when presented by an antigen presenting cell having a HLA class I  
CC molecule, effectively induce the activation and proliferation of CD8+  
CC cytotoxic T lymphocytes (CTLs). MAGE-A12 is useful for treating a subject  
CC having a disorder characterised by expression of MAGE-A12. The protein  
CC microarray comprising MAGE-A12 is useful for diagnosing a disorder.  
CC especially cancer, by determining the binding of an antibody, T  
CC lymphocytes or a HLA molecule isolated from the subject suspected of  
CC having the disorder characterised by the expression of MAGE-A12. MAGE-A12  
CC is useful for treating cancers, including bladder carcinomas, melanomas,  
CC oesophageal, lung, head and neck, breast, colorectal carcinomas,  
CC myelomas, brain tumours, sarcomas, prostate and renal carcinomas and to  
CC produce antibodies. MAGE-A12 antibodies are useful for diagnosing  
CC disorders characterised by expression of MAGE-A12 immunogenic  
CC polypeptide. These MAGE-A12 peptides are used as vaccines. They are also  
CC used in gene therapy. The present sequence is an antigenic peptide  
CC derived from NY-ESO-1. This peptide which is characteristic of tumours is  
CC presented by HLA-A2 MHC (major histocompatibility complex) and is  
CC recognised by CTLs  
XX  
SQ Sequence 9 AA:  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE02120 (1-9)  
QY 522 TCCTGTGATGTGATCAGCAGTGC 548  
Db 1 SerLeuNeuMetTrpIleThrGlnCys 9  
RESULT 343  
AAE02121  
ID AAE02121 standard; peptide; 9 AA.  
XX  
AC AAE02121;  
XX  
DT 31-JUL-2001 (first entry)  
XX  
DE NY-ESO-1 human leukocyte antigen-A2-binding peptide #3.  
XX  
KW Human; cytostatic; immunogen; NY-ESO-1; human leukocyte antigen; HLA;  
KW CDB; cytotoxic T lymphocyte; cancer; carcinoma; melanoma; myeloma;  
KW brain tumour; sarcoma; vaccine; gene therapy.  
XX  
OS Homo sapiens.  
XX  
PN WO200129220-A2.  
XX  
PD 26-APR-2001.  
XX  
PF 19-OCT-2000; 2000WO-US028852.  
XX  
PR 19-OCT-1999; 99US-0160374P.  
PR 01-FEB-2000; 2000US-0179570P.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Heidecker L, Van Den Eynde B, Boon-Falleur T, Brasseur F;  
XX  
DR WPI; 2001-328498/34.  
XX  
PT New antigenic peptides derived from MAGE-A12 polypeptides, useful for  
PT diagnosis and treatment of cancer, such as bladder, lung, breast, brain,



XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
CC  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAB69914 (1-9)  
QY 468 GCTGCAGACACCGCCACTGCAGCTC 494  
Db 1 A1Aa1aaph1shArgGlnLeuGlnLeu 9  
RESULT 346  
AAB69914  
ID AAB69914 standard; peptide; 9 AA.  
XX  
AC AAB69914;  
XX  
DT 27-APR-2001 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #14.  
XX  
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
OS Homo sapiens.  
XX  
FN WO200107917-A1.  
XX  
PD 01-FEB-2001.  
XX  
PF 14-JUL-2000; 2000WO-US019220.  
XX  
PR 23-JUL-1999; 99US-00359503.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
WP1; 2001-182822/18.  
XX  
PT Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
PS Example 14; Page 25; 50pp; English.  
XX  
CC The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma

CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
CC  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAB69914 (1-9)  
QY 405 GTGCCAGGAGGTCTTGAAGAAGTTC 431  
Db 1 ValProGlyValLeuLeuLysGluPhe 9  
RESULT 347  
AAB69907  
ID AAB69907 standard; peptide; 9 AA.  
XX  
AC AAB69907;  
XX  
DT 27-APR-2001 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #7.  
XX  
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
OS Homo sapiens.  
XX  
FN WO200107917-A1.  
XX  
PD 01-FEB-2001.  
XX  
PF 14-JUL-2000; 2000WO-US019220.  
XX  
PR 23-JUL-1999; 99US-00359503.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
WP1; 2001-182822/18.  
XX  
PT Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
PS Example 14; Page 25; 50pp; English.  
XX  
CC The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma

```

XX SQ Sequence 9 AA;
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69907 (1-9)
OY 231 GCCCGCGGCGTCCGATGCGCGCG 257
DB 1 AAlProArgGlyProHisGlyGlyAla 9

RESULT 348
AAB69915
ID AAB69915 standard; peptide; 9 AA.
XX
AC AAB69915;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #15.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69922 (1-9)

```

```

Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69915 (1-9)
OY 303 GAGAGCCGCGCTGCTTGAAGTCTTACTTC 329
DB 1 GluSerArgLeuLeuGluPheTyrIeu 9

RESULT 349
AAB69922
ID AAB69922 standard; peptide; 9 AA.
XX
AC AAB69922;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #22.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69922 (1-9)

```



OY 381 GCCCAGATGCCCGCTTCCGCTG 407  
 DB 1 AAGlnAphAlaProLeuProVal 9

RESULT 350  
 ID AAB69949 standard; peptide; 9 AA.  
 XX AAB69949;  
 XX 27-APR-2001 (first entry)  
 XX Human NY-ESO-1 CTL stimulating peptide #3.  
 DE Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
 KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
 KW non-small cell lung carcinoma; tumour status determination.  
 XX Homo sapiens.  
 OS WO200107917-A1.  
 FN 01-FEB-2001.  
 XX 14-JUL-2000; 2000WO-US019220.  
 PF 23-JUL-1999; 99US-00359503.  
 XX (LUDWIG INST CANCER RES.  
 PA (SLOAN KETTERING INST CANCER RES.  
 PA (CORR ) CORNELL RES FOUND INC.  
 XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
 PI WPI; 2001-182822/18.  
 DR Method useful for determining the status (e.g. progression, regression or  
 XX stability of the disease) of a cancerous condition, involves determining  
 PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
 PT patient.  
 PS Example 13; Page 24; 50pp; English.  
 XX The present sequence is given in a specification relating to a method for  
 CC determining the status of a cancerous condition in a patient with a  
 CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
 CC taken from the patient for antibodies that specifically bind to the NY-  
 CC ESO-1 and comparing the value obtained to a prior value obtained from  
 CC assay of a prior sample taken from the patient. Any difference between  
 CC the values is indicative of a change in status of the cancerous  
 CC condition. The method is useful for determining whether a cancerous  
 CC condition is progressing, regressing or remaining stable, in particular  
 CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
 CC cell lung carcinoma or bladder carcinoma

XX Sequence 9 AA;  
 SQ

Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69949 (1-9)

OY 516 CAGCTTCCCTGTATGTGATCAGC 542  
 DB 1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 351

AAB69909  
 ID AAB69909 standard; peptide; 9 AA.  
 XX AAB69909;  
 XX 27-APR-2001 (first entry)  
 XX Human NY-ESO-1 HLA binding motif #9.  
 DE Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
 KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
 KW non-small cell lung carcinoma; tumour status determination.  
 XX Homo sapiens.  
 OS WO200107917-A1.  
 FN 01-FEB-2001.  
 XX 14-JUL-2000; 2000WO-US019220.  
 PF 23-JUL-1999; 99US-00359503.  
 XX (LUDWIG INST CANCER RES.  
 PA (SLOAN KETTERING INST CANCER RES.  
 PA (CORR ) CORNELL RES FOUND INC.  
 XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
 PI WPI; 2001-182822/18.  
 DR Method useful for determining the status (e.g. progression, regression or  
 XX stability of the disease) of a cancerous condition, involves determining  
 PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
 PT patient.  
 PS Example 14; Page 25; 50pp; English.  
 XX The present sequence is given in a specification relating to a method for  
 CC determining the status of a cancerous condition in a patient with a  
 CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
 CC taken from the patient for antibodies that specifically bind to the NY-  
 CC ESO-1 and comparing the value obtained to a prior value obtained from  
 CC assay of a prior sample taken from the patient. Any difference between  
 CC the values is indicative of a change in status of the cancerous  
 CC condition. The method is useful for determining whether a cancerous  
 CC condition is progressing, regressing or remaining stable, in particular  
 CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
 CC cell lung carcinoma or bladder carcinoma

XX Sequence 9 AA;  
 SQ

Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB69909 (1-9)

OY 390 GCCCAGCGCTTCCGCTGCCAGGGCTG 416  
 DB 1 AlaProProLeuProValProGlyVal 9

RESULT 352  
 ID AAB69919 standard; peptide; 9 AA.  
 XX AAB69919;  
 XX 27-APR-2001 (first entry)

```

XX Human NY-ESO-1 HLA binding motif #19.
DE
XX
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
XX non-small cell lung carcinoma; tumour status determination.
OS Homo sapiens.
XX
XX WO200107917-A1.
XX
XX 01-FEB-2001.
XX
XX 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDWIG INST CANCER RES.
PA (SLOAN KETTERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX WPI; 2001-182822/18.
XX
XX Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
XX Example 14; Page 25; 50pp; English.
XX
XX The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
XX Sequence 9 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69919 (1-9)
QY 357 GCAGAGCTGGCCCGCAGAGCCTGGCC 383
DB 1 AAGAGLeuAlaArgSerLeuAla 9
RESULT 353
AAB69901
ID AAB69901 standard; peptide; 9 AA.
XX
XX AAB69901;
AC
XX 27-APR-2001 (first entry)
DT
XX Human NY-ESO-1 HLA binding motif #1.
DE
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
XX non-small cell lung carcinoma; tumour status determination.
KW

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```

XX Homo sapiens.
XX
XX WO200107917-A1.
XX
XX 01-FEB-2001.
XX
XX 14-JUL-2000; 2000WO-US019220.
XX
XX 23-JUL-1999; 99US-00359503.
XX
XX (LUDWIG INST CANCER RES.
PA (SLOAN KETTERING INST CANCER RES.
XX (CORR ) CORNELL RES FOUND INC.
XX
XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX WPI; 2001-182822/18.
XX
XX Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
XX Example 14; Page 24; 50pp; English.
XX
XX The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
XX Sequence 9 AA;
SQ
XX
XX Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69901 (1-9)
QY 297 GGGCCGAGAGCCGCTGCTTGAATTG 323
DB 1 GlyProGluSerArgLeuLeuGluPhe 9
RESULT 354
AAB69918
ID AAB69918 standard; peptide; 9 AA.
XX
XX AAB69918;
AC
XX 27-APR-2001 (first entry)
DT
XX Human NY-ESO-1 HLA binding motif #18.
DE
XX Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
XX non-small cell lung carcinoma; tumour status determination.
XX
XX Homo sapiens.
OS
XX WO200107917-A1.
XX
XX 01-FEB-2001.
XX

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XX 14-JUL-2000; 2000WO-US019220.
PF (SLOK ) CORNELL RES FOUND INC.
XX 23-JUL-1999; 99US-00359503.
PR (LUDW-) LUDWIG INST CANCER RES.
XX PA (SLOK ) SLOAN KETTERING INST CANCER RES.
XX PA (CORR ) CORNELL RES FOUND INC.
XX PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX WPI; 2001-182822/18.
DR
XX Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
XX Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
XX
US-10-023-182-1 (1-752) x AAB69918 (1-9)
OY 300 CCGAGAGCCCGCTGAGTTCAC 326
DB 1 ProGluSerArgLeuGluGluPheTyr 9
XX
RESULT 355
AAB69923
ID AAB69923 standard; peptide; 9 AA.
XX
AC AAB69923;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #23.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PR 01-FEB-2001.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX PA (SLOK ) SLOAN KETTERING INST CANCER RES.
XX PA (CORR ) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX WPI; 2001-182822/18.
DR
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```
PA (SLOK ) SLOAN KETTERING INST CANCER RES.
PA (CORR ) CORNELL RES FOUND INC.
XX
XX Jäger E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX WPI; 2001-182822/18.
DR
XX Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
XX Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
XX
US-10-023-182-1 (1-752) x AAB69923 (1-9)
OY 486 CTGCAGCTCTCCATCAGCTCCTGTCTC 512
DB 1 LeuGlnLeuSerIleSerSerCysLeu 9
XX
RESULT 356
AAB69912
ID AAB69912 standard; peptide; 9 AA.
XX
AC AAB69912;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #12.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
PN WO200107917-A1.
XX
PR 01-FEB-2001.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX PA (SLOK ) SLOAN KETTERING INST CANCER RES.
XX PA (CORR ) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX WPI; 2001-182822/18.
DR
```

XX Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50bp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
CC  
XX  
SQ Sequence 9 AA;  
  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAB69912 (1-9)  
QY 288 GGGGCCGAGGGGCGAGAGCCGCTG 314  
AAB69913  
DB 1 GlyAlaArgGlyProGluSerArgIleu 9  
  
RESULT 357  
ID AAB69913 standard; peptide; 9 AA.  
XX  
AC AAB69913;  
XX  
DT 27-APR-2001 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #13.  
XX  
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
OS Homo sapiens.  
XX  
PN WO200107917-A1.  
XX  
PD 01-FEB-2001.  
XX  
PF 14-JUL-2000; 2000WO-US019220.  
XX  
PR 23-JUL-1999; 99US-00359503.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
DR WPI; 2001-182822/18.  
XX  
PT Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX

PS Example 14; Page 25; 50bp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
CC  
XX  
SQ Sequence 9 AA;  
  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAB69913 (1-9)  
QY 303 GAGAGCCGCTGCTTGAAGTTCTACCTC 329  
AAB69920  
DB 1 GluSerArgLeuGluPheTyrIleu 9  
  
RESULT 358  
ID AAB69920 standard; peptide; 9 AA.  
XX  
AC AAB69920;  
XX  
DT 27-APR-2001 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #20.  
XX  
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
OS Homo sapiens.  
XX  
PN WO200107917-A1.  
XX  
PD 01-FEB-2001.  
XX  
PF 14-JUL-2000; 2000WO-US019220.  
XX  
PR 23-JUL-1999; 99US-00359503.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
DR WPI; 2001-182822/18.  
XX  
PT Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50bp; English.  
XX  
XX The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC

CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAB69920 (1-9)  
OY 351 ATGGAGCAGAGCTGCCCGCAGAGC 377  
DB 1 MetGIuAlaGIuLeuAlaArgArgSer 9  
RESULT 359  
AAB69908  
ID AAB69908 standard; peptide; 9 AA.  
AC AAB69908;  
AC AAB69908;  
DT 27-APR-2001 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #8.  
XX  
KM Human, NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
OS Homo sapiens.  
XX  
PN WO200107917-A1.  
XX  
PD 01-FEB-2001.  
XX  
PE 14-JUL-2000; 2000WO-US019220.  
XX  
PF 23-JUL-1999; 99US-00359503.  
XX  
PR (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
XX WPI; 2001-182822/18.  
XX  
DR Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX  
PS The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small

CC cell lung carcinoma or bladder carcinoma  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAB69908 (1-9)  
OY 303 GAGAGCCGCGCTTGAGTTCTACCTC 329  
DB 1 GluSerArgLeuLeuGluPheTyrLeu 9  
RESULT 360  
AAB69917  
ID AAB69917 standard; peptide; 9 AA.  
AC AAB69917;  
AC AAB69917;  
DT 27-APR-2001 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #17.  
XX  
KM Human, NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;  
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;  
KW non-small cell lung carcinoma; tumour status determination.  
XX  
OS Homo sapiens.  
XX  
PN WO200107917-A1.  
XX  
PD 01-FEB-2001.  
XX  
PE 14-JUL-2000; 2000WO-US019220.  
XX  
PF 23-JUL-1999; 99US-00359503.  
XX  
PR (LUDW-) LUDWIG INST CANCER RES.  
PA (SLOK) SLOAN KETTERING INST CANCER RES.  
PA (CORR) CORNELL RES FOUND INC.  
XX  
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;  
XX  
XX WPI; 2001-182822/18.  
XX  
DR Method useful for determining the status (e.g. progression, regression or  
PT stability of the disease) of a cancerous condition, involves determining  
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
PT patient.  
XX  
XX Example 14; Page 25; 50pp; English.  
XX  
PS The present sequence is given in a specification relating to a method for  
CC determining the status of a cancerous condition in a patient with a  
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
CC taken from the patient for antibodies that specifically bind to the NY-  
CC ESO-1 and comparing the value obtained to a prior value obtained from  
CC assay of a prior sample taken from the patient. Any difference between  
CC the values is indicative of a change in status of the cancerous  
CC condition. The method is useful for determining whether a cancerous  
CC condition is progressing, regressing or remaining stable, in particular  
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
CC cell lung carcinoma or bladder carcinoma  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9



```
RESULT 363
AAB69903
ID AAB69903 standard; peptide; 9 AA.
XX
AC AAB69903;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #3.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
MO200107917-A1.
XX
PD 01-FEB-2001.
XX
PE 14-JUL-2000; 2000MO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDWIG-) LUDWIG INST CANCER RES.
PA (SLOK ) SLOAN KETTERING INST CANCER RES.
PA (CORR ) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 24; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69903 (1-9)
OY 528 TTGATGTGATCAGCAGCTTTCTG 554
DB 1 LeuMetTPrIeThnGInCySphEbeu 9
XX
RESULT 364
AAB69948
ID AAB69948 standard; peptide; 9 AA.
XX
AC AAB69948;
XX
```

```
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 CTL stimulating peptide #2.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX
MO200107917-A1.
XX
PD 01-FEB-2001.
XX
PE 14-JUL-2000; 2000MO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDWIG-) LUDWIG INST CANCER RES.
PA (SLOK ) SLOAN KETTERING INST CANCER RES.
PA (CORR ) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX
WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 13; Page 24; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
XX
SQ Sequence 9 AA;
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69948 (1-9)
OY 522 TCCCTGTGATGTGATCAGCAGTGC 548
DB 1 SerLeuMetTPrIeThnGInCyS 9
XX
RESULT 365
AAB69906
ID AAB69906 standard; peptide; 9 AA.
XX
AC AAB69906;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #6.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
```

```
KW non-small cell lung carcinoma; tumour status determination.
XX
OS Homo sapiens.
XX WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX WPI; 2001-182822/18.
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
CC
SQ Sequence 9 AA;
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69906 (1-9)
QY 288 GGGGCGAGGGCGGAGAGCGGCTG 314
DB 1 G1yAlaArgG1yProG1uSerArgLeu 9
RESULT 366
AAB69916
ID AAB69916 standard; peptide; 9 AA.
XX
AC AAB69916;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #16.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
OS Homo sapiens.
XX
PF WO200107917-A1.
XX
```

```
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (SLOK) SLOAN KETTERING INST CANCER RES.
PA (CORR) CORNELL RES FOUND INC.
XX
PI Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M;
XX WPI; 2001-182822/18.
XX
DR WPI; 2001-182822/18.
XX
PT Method useful for determining the status (e.g. progression, regression or
PT stability of the disease) of a cancerous condition, involves determining
PT the levels of NY-ESO-1 specific antibodies in a sample taken from a
PT patient.
XX
PS Example 14; Page 25; 50pp; English.
XX
CC The present sequence is given in a specification relating to a method for
CC determining the status of a cancerous condition in a patient with a
CC tumour that expresses NY-ESO-1. The method comprises assaying a sample
CC taken from the patient for antibodies that specifically bind to the NY-
CC ESO-1 and comparing the value obtained to a prior value obtained from
CC assay of a prior sample taken from the patient. Any difference between
CC the values is indicative of a change in status of the cancerous
CC condition. The method is useful for determining whether a cancerous
CC condition is progressing, regressing or remaining stable, in particular
CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small
CC cell lung carcinoma or bladder carcinoma
CC
SQ Sequence 9 AA;
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAB69916 (1-9)
QY 288 GGGGCGAGGGCGGAGAGCGGCTG 314
DB 1 G1yAlaArgG1yProG1uSerArgLeu 9
RESULT 367
AAB69921
ID AAB69921 standard; peptide; 9 AA.
XX
AC AAB69921;
XX
DT 27-APR-2001 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #21.
XX
KW Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotoxic T cell;
KW HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinoma;
KW non-small cell lung carcinoma; tumour status determination.
OS Homo sapiens.
XX
PF WO200107917-A1.
XX
PD 01-FEB-2001.
XX
PF 14-JUL-2000; 2000WO-US019220.
XX
PR 23-JUL-1999; 99US-00359503.
XX
```



PA (LUDW-) LUDWIG INST CANCER RES.  
 PA (SLOK ) SLOAN KETTERING INST CANCER RES.  
 PA (CORR ) CORNELL RES FOUND INC.  
 XX Jager E, Stockert E, Old LJ, Knuth A, Chen Y, Scanlan M,  
 XX WPI; 2001-182822/18.  
 DR WPI; 2001-182822/18.  
 XX  
 PT Method useful for determining the status (e.g. progression, regression or  
 PT stability of the disease) of a cancerous condition, involves determining  
 PT the levels of NY-ESO-1 specific antibodies in a sample taken from a  
 PT patient.  
 XX  
 XX Example 14; Page 25; 50pp; English.  
 XX  
 CC The present sequence is given in a specification relating to a method for  
 CC determining the status of a cancerous condition in a patient with a  
 CC tumour that expresses NY-ESO-1. The method comprises assaying a sample  
 CC taken from the patient for antibodies that specifically bind to the NY-  
 CC ESO-1 and comparing the value obtained to a prior value obtained from  
 CC assay of a prior sample taken from the patient. Any difference between  
 CC the values is indicative of a change in status of the cancerous  
 CC condition. The method is useful for determining whether a cancerous  
 CC condition is progressing, regressing or remaining stable, in particular  
 CC in patients receiving treatment for a melanoma, adenocarcinoma, non-small  
 CC cell lung carcinoma or bladder carcinoma  
 CC  
 XX Sequence 9 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAB69921 (1-9)  
 QY 513 CAGCAGCTTTCCCTGTGATGTGATC 539  
 DB 1 GlnGlnLeuSerLeuLeuMetTrpIle 9  
 RESULT 368  
 AAG67180 standard; peptide; 9 AA.  
 XX  
 AC AAG67180;  
 XX  
 DT 13-NOV-2001 (first entry)  
 XX  
 DE Cancer testis tumour antigen NY-ESO-1 derived peptide.  
 XX  
 XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
 KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
 KW cancer; testis tumour.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO200162917-A1.  
 XX  
 PD 30-AUG-2001.  
 XX  
 PF 22-JAN-2001; 2001WO-US002126.  
 XX  
 PR 22-FEB-2000; 2000US-00510635.  
 XX  
 PA (LUDW-) LUDWIG INST CANCER RES.  
 XX  
 PI Lethe B, Boon-Falleur T;  
 XX  
 DR WPI; 2001-550091/61.  
 XX

PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
 PT for diagnosing testicular tumors.  
 XX  
 PS Example 13; Page 26; 50pp; English.  
 XX  
 CC AAG67169-AAG67206 represent peptides which are derived from cancer testis  
 CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
 CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at  
 CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
 CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
 CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
 CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
 CC may be assayed for the diagnosis of cancer, especially testis tumours  
 CC  
 XX Sequence 9 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAG67180 (1-9)  
 QY 288 GGGGCGAGGGCGCGAGCGCGCTG 314  
 DB 1 GlyAlaArgGlyProGlnSerArgLeu 9  
 RESULT 369  
 AAG67169 standard; peptide; 9 AA.  
 XX  
 AC AAG67169;  
 XX  
 DT 13-NOV-2001 (first entry)  
 XX  
 DE Cancer testis tumour antigen NY-ESO-1 derived peptide.  
 XX  
 XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
 KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
 KW cancer; testis tumour.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO200162917-A1.  
 XX  
 PD 30-AUG-2001.  
 XX  
 PF 22-JAN-2001; 2001WO-US002126.  
 XX  
 PR 22-FEB-2000; 2000US-00510635.  
 XX  
 PA (LUDW-) LUDWIG INST CANCER RES.  
 XX  
 PI Lethe B, Boon-Falleur T;  
 XX  
 DR WPI; 2001-550091/61.  
 XX  
 PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
 PT for diagnosing testicular tumors.  
 XX  
 PS Example 13; Page 26; 50pp; English.  
 XX  
 CC AAG67169-AAG67206 represent peptides which are derived from cancer testis  
 CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
 CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at  
 CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
 CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
 CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
 CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
 CC may be assayed for the diagnosis of cancer, especially testis tumours

```

XX      SQ      Sequence 9 AA;
Alignment Scores:
Pred. No.:      816      Length:      9
Score:          9.00      Matches:      9
Percent Similarity: 100.00%      Conservative: 0
Best Local Similarity: 100.00%      Mismatches: 0
Query Match:      5.00%      Indels:      0
DB:              1      Gaps:          0

US-10-023-182-1 (1-752) x AAG67169 (1-9)
OY      297 GGGCCGAGAGCCGCTGCTTGAAGTTC 323
DB      1 GlyProGluSerArgLeuLeuGluPhe 9

RESULT 370
AAG67181 ID AAG67181 standard; peptide; 9 AA.
XX
XX AC AAG67181;
XX
XX DT 13-NOV-2001 (first entry)
XX
XX DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
XX KM Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
XX HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
XX cancer; testis tumour.
XX
XX OS Homo sapiens.
XX
XX PN WO200162917-A1.
XX
XX PD 30-AUG-2001.
XX
XX PF 22-JAN-2001; 2001WO-US002126.
XX
XX PR 22-FEB-2000; 2000US-00510635.
XX
XX PA (LUDW-) LUDWIG INST CANCER RES.
XX
XX PI Lethe B, Boon-Falleur T;
XX
XX DR WPI; 2001-550091/61.
XX
XX PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
XX for diagnosing testicular tumors.
XX
XX PS Example 13; Page 26; 50pp; English.
XX
XX CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
XX tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
XX leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
XX least one human leukocyte antigen (HLA) binding peptide, which binds to
XX Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
XX expressed in tumour mRNA and in testis, but not normal colon, kidney,
XX liver or brain tissue. The presence or level of expression of NY-ESO-1
XX may be assayed for the diagnosis of cancer, especially testis tumours
XX
XX SQ Sequence 9 AA;

Alignment Scores:
Pred. No.:      816      Length:      9
Score:          9.00      Matches:      9
Percent Similarity: 100.00%      Conservative: 0
Best Local Similarity: 100.00%      Mismatches: 0
Query Match:      5.00%      Indels:      0
DB:              1      Gaps:          0

US-10-023-182-1 (1-752) x AAG67181 (1-9)

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```

OY      303 GAGAGCCGCTGCTTGAAGTTCACCTC 329
DB      1 GluSerArgLeuLeuGluPheTyrLeu 9

RESULT 371
AAG67190 ID AAG67190 standard; peptide; 9 AA.
XX
XX AC AAG67190;
XX
XX DT 13-NOV-2001 (first entry)
XX
XX DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
XX KM Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
XX HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
XX cancer; testis tumour.
XX
XX OS Homo sapiens.
XX
XX PN WO200162917-A1.
XX
XX PD 30-AUG-2001.
XX
XX PF 22-JAN-2001; 2001WO-US002126.
XX
XX PR 22-FEB-2000; 2000US-00510635.
XX
XX PA (LUDW-) LUDWIG INST CANCER RES.
XX
XX PI Lethe B, Boon-Falleur T;
XX
XX DR WPI; 2001-550091/61.
XX
XX PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
XX for diagnosing testicular tumors.
XX
XX PS Example 13; Page 26; 50pp; English.
XX
XX CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
XX tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
XX leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
XX least one human leukocyte antigen (HLA) binding peptide, which binds to
XX Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
XX expressed in tumour mRNA and in testis, but not normal colon, kidney,
XX liver or brain tissue. The presence or level of expression of NY-ESO-1
XX may be assayed for the diagnosis of cancer, especially testis tumours
XX
XX SQ Sequence 9 AA;

Alignment Scores:
Pred. No.:      816      Length:      9
Score:          9.00      Matches:      9
Percent Similarity: 100.00%      Conservative: 0
Best Local Similarity: 100.00%      Mismatches: 0
Query Match:      5.00%      Indels:      0
DB:              1      Gaps:          0

US-10-023-182-1 (1-752) x AAG67190 (1-9)
OY      381 GCCCAGATGCGCCCAACCGCTTCCTG 407
DB      1 AlaGlnAspAlaProLeuProVal 9

RESULT 372
AAG67176 ID AAG67176 standard; peptide; 9 AA.
XX
XX AC AAG67176;
XX
XX DT 13-NOV-2001 (first entry)
XX
XX DE Cancer testis tumour antigen NY-ESO-1 derived peptide.

```

XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
KM Cancer; testis tumour.  
XX  
OS Homo sapiens.  
XX  
PN WO200162917-A1.  
XX  
PD 30-AUG-2001.  
XX  
PF 22-JAN-2001; 2001WO-US002126.  
XX  
PR 22-FEB-2000; 2000US-00510635.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Leche B, Boon-Falleur T;  
XX  
PI MPI; 2001-550091/61.  
XX  
DR Genomic sequences of tumor associated antigen Ey-ESO-1 (LAGE-2) useful  
PT for diagnosing testicular tumors.  
XX  
PS Example 13; Page 26; 50pp; English.  
XX  
SQ AAG67169-AAG67206 represent peptides which are derived from cancer testis  
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
CC leukocyte antigens (HLA). NY-ESO-1 is a molecule that is processed to at  
CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
CC may be assayed for the diagnosis of cancer, especially testis tumours  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 916 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAG67176 (1-9)  
QY 303 GAGAGCCGCTGCTTGTAGTTCTACCTC 329  
DB 1 GluSerArgLeuLeuGluPheTyrLeu 9  
RESULT 373  
AAG67166  
ID AAG67166 standard; peptide; 9 AA.  
XX  
AC AAG67166;  
XX  
XX 13-NOV-2001 (first entry)  
XX  
DE Cancer testis tumour antigen NY-ESO-1 derived CTL-stimulating peptide.  
XX  
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
KM Cancer; testis tumour.  
XX  
OS Homo sapiens.  
XX  
PN WO200162917-A1.  
XX  
PD 30-AUG-2001.  
XX  
PF 22-JAN-2001; 2001WO-US002126.

PR 22-FEB-2000; 2000US-00510635.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Leche B, Boon-Falleur T;  
XX  
PI MPI; 2001-550091/61.  
XX  
DR Genomic sequences of tumor associated antigen Ey-ESO-1 (LAGE-2) useful  
PT for diagnosing testicular tumors.  
XX  
PS Example 12; Page 24; 50pp; English.  
XX  
SQ The present sequence represents a peptide which is derived from cancer  
CC testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptide that is  
CC stimulates cytolytic T cell lines (CTLs). NY-ESO-1 is a molecule that is  
CC processed to at least one human leukocyte antigen (HLA) binding peptide,  
CC which binds to Class I and Class II major histocompatibility complex  
CC (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal  
CC colon, kidney, liver or brain tissue. The presence or level of expression  
CC of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis  
CC tumours  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 916 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAG67166 (1-9)  
QY 522 TCCCTGTGATGTGATCAGCAGTGC 548  
DB 1 SerLeuLeuMetTrpIleThrGlnCys 9  
RESULT 374  
AAG67186  
ID AAG67186 standard; peptide; 9 AA.  
XX  
AC AAG67186;  
XX  
XX 13-NOV-2001 (first entry)  
XX  
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.  
XX  
KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
KM Cancer; testis tumour.  
XX  
OS Homo sapiens.  
XX  
PN WO200162917-A1.  
XX  
PD 30-AUG-2001.  
XX  
PF 22-JAN-2001; 2001WO-US002126.  
XX  
PR 22-FEB-2000; 2000US-00510635.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Leche B, Boon-Falleur T;  
XX  
PI MPI; 2001-550091/61.  
XX  
DR Genomic sequences of tumor associated antigen Ey-ESO-1 (LAGE-2) useful  
PT for diagnosing testicular tumors.  
XX  
PS Example 13; Page 26; 50pp; English.

```
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67186 (1-9)

QY 300 CCGAGAGCGCGCTGTGAGTTCTAC 326
Db 1 ProGlnSerArgLeuLeuMetTrpIle 9

RESULT 375
AAG67189
ID AAG67189 standard; peptide; 9 AA.
AC AAG67189;
XX
XX 13-NOV-2001 (first entry)
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
XX Homo sapiens.
OS
XX WO200162917-A1.
PN
XX 30-AUG-2001.
PD
XX 22-JAN-2001; 2001WO-US002126.
PF
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX Lethe B, Boon-Falleur T;
PI
XX WPI; 2001-550091/61.
DR
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
PT
XX Example 13; Page 26; 50pp; English.
PS
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
SQ Sequence 9 AA;

Alignment Scores:
```

```
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67189 (1-9)

QY 513 CAGCAGCTTCCCTGTGATGTGATC 539
Db 1 GlnGlnLeuSerLeuLeuMetTrpIle 9

RESULT 376
AAG67188
ID AAG67188 standard; peptide; 9 AA.
XX
XX AAG67188;
AC
XX 13-NOV-2001 (first entry)
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
XX Homo sapiens.
OS
XX WO200162917-A1.
PN
XX 30-AUG-2001.
PD
XX 22-JAN-2001; 2001WO-US002126.
PF
XX 22-FEB-2000; 2000US-00510635.
PR
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX Lethe B, Boon-Falleur T;
PI
XX WPI; 2001-550091/61.
DR
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
PT
XX Example 13; Page 26; 50pp; English.
PS
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67188 (1-9)

QY 351 ATGGAAGCAGAGCTGCCCGCAGAGC 377
Db 1 MetGlnArgLeuLeuMetTrpIle 9
```

|  |   |                 |
|--|---|-----------------|
|  | RESULT 377  |                 |
| ID                                       | AAG67179 standard; peptide; 9 AA.   |                 |
| AC                                       | AAG67179;   |                 |
| DT                                       | 13-NOV-2001 (first entry)   |                 |
| DE                                       | Cancer testis tumour antigen NY-ESO-1 derived peptide.  |                 |
| KM                                       | Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;<br>HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;<br>cancer; testis tumour.  |                 |
| OS                                       | Homo sapiens.   |                 |
| XN                                       | WO200162917-A1.   |                 |
| PD                                       | 30-AUG-2001.  |                 |
| PF                                       | 22-JAN-2001; 2001WO-US002126.   |                 |
| PR                                       | 22-FEB-2000; 2000US-00510635.   |                 |
| PA                                       | (LUDW-) LUDWIG INST CANCER RES.   |                 |
| PI                                       | Lethe B, Boon-Falleur T;  |                 |
| DR                                       | WIJ; 2001-550091/61.  |                 |
| PT                                       | Genomic sequences of tumor associated antigen Ey-ESO-1 (LAGE-2) useful<br>for diagnosing testicular tumors.   |                 |
| PS                                       | Example 13; Page 26; 50bp; English.   |                 |
| CC                                       | AAG67169-AA667206 represent peptides which are derived from cancer testis<br>tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human<br>leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at<br>least one human leukocyte antigen (HLA) binding peptide, which binds to<br>Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is<br>expressed in tumour mRNA and in testis, but not normal colon, kidney,<br>liver or brain tissue. The presence or level of expression of NY-ESO-1<br>may be assayed for the diagnosis of cancer, especially testis tumours |                 |
| SQ                                       | Sequence 9 AA;  |                 |
| Alignment Scores:                        |   |                 |
| Pred. No.:                               | 816   | Length: 9       |
| Score:                                   | 9.00  | Matches: 9      |
| Percent Similarity:                      | 100.00%   | Conservative: 0 |
| Best Local Similarity:                   | 100.00%   | Mismatches: 0   |
| Query Match:                             | 5.00%   | Indels: 0       |
| DB:                                      | 1   | Gaps: 0         |
| US-10-023-182-1 (1-752) x AAG67179 (1-9) |   |                 |
| OY                                       | 468 GCTGCAAGCACCGCCAATGCAGTC 494  |                 |
| Dd                                       | <br>                   <br>1 AlAlAhphIsArGTnLeugInIeu 9   |                 |
| RESULT 378                               |   |                 |
| AAAG67183                                |   |                 |
| XX                                       | standard; peptide; 9 AA.  |                 |
| XX                                       | AAAG67183;  |                 |
| DT                                       | 13-NOV-2001 (first entry)   |                 |
| DE                                       | Cancer testis tumour antigen NY-ESO-1 derived peptide.  |                 |
| KM                                       | Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;<br>HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;<br>cancer; testis tumour.  |                 |

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XX OS Homo sapiens.
XX PN W0200162917-A1.
XX PD 30-AUG-2001.
XX PF 22-JAN-2001; 2001WO-US002126.
XX PR 22-FEB-2000; 2000US-00510635.
PA (LUDW-) LUDWIG INST CANCER RES.
XX Leche B, Boon-Falleur T;
PI WP1; 2001-550091/61.
XX PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGB-2) useful
PT for diagnosing testicular tumors.
XX Example 13; Page 26; 50pp; English.
XX PS AAG67169-AA667206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGEB-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX Sequence 9 AA:
SQ
Alignment Scores:
Pred. No.:      816      Length:      9
Score:          9.00     Matches:      9
Percent Similarity: 100.00% Conservatve:  0
Best Local Similarity: 100.00% Mismatches:    0
Query Match:       5.00% Indels:      0
DB:               1      Gaps:        0
US-10-023-182-1 (1-752) x AAG67183 (1-9)
QY      303 GAGAGCGGCGCTGTTGAGTTCACCTC 329
Db      |||||
      1 GluSerArgIeuGlueuGluheTyreIeu 9
RESULT 379
AAG67191
ID AAG67191 standard; peptide; 9 AA.
XX AC AAG67191;
XX DT 13-NOV-2001 (first entry)
XX DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX KW Cancer testis tumour antigen; NY-ESO-1; LAGEB-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KW cancer; testis tumour.
XX KM
XX OS Homo sapiens.
XX PN W0200162917-A1.
XX PD 30-AUG-2001.
XX PF 22-JAN-2001; 2001WO-US002126.
XX PR 22-FEB-2000; 2000US-00510635.
PA (LUDW-) LUDWIG INST CANCER RES.
XX
```

PI Lethe B, Boon-Falleur T;  
 DR WPI; 2001-550091/61.  
 XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
 PT for diagnosing testicular tumors.  
 XX  
 XX Example 13; Page 26; 50pp; English.  
 XX  
 CC AAG67169-AAG67206 represent peptides which are derived from cancer testis  
 CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
 CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at  
 CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
 CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
 CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
 CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
 CC may be assayed for the diagnosis of cancer, especially testis tumours  
 XX  
 XX Sequence 9 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAG67191 (1-9)  
 QY 486 CTGCAGCTTCGATCAGCTCCCTGCTC 512  
 Db 1 LeuGlnLeuSerLeuMetTrpIleThr 9  
 RESULT 380  
 AAG67167  
 ID AAG67167 standard; peptide; 9 AA.  
 AC AAG67167;  
 XX  
 DT 13-NOV-2001 (first entry)  
 XX  
 DE Cancer testis tumour antigen NY-ESO-1 derived CTL-stimulating peptide.  
 XX  
 KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
 KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
 KW cancer; testis tumour.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO200162917-A1.  
 XX  
 PD 30-AUG-2001.  
 XX  
 PF 22-JAN-2001; 2001WO-US002126.  
 XX  
 PR 22-FEB-2000; 2000US-00510635.  
 XX  
 PA (LUDW-) LUDWIG INST CANCER RES.  
 XX  
 PI Lethe B, Boon-Falleur T;  
 XX  
 DR WPI; 2001-550091/61.  
 XX  
 PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
 PT for diagnosing testicular tumors.  
 XX  
 XX Example 12; Page 24; 50pp; English.  
 XX  
 CC The present sequence represents a peptide which is derived from cancer  
 CC testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptide  
 CC stimulates cytolytic T cell lines (CTLs). NY-ESO-1 is a molecule that is  
 CC processed to at least one human leukocyte antigen (HLA) binding peptide,

CC which binds to Class I and Class II major histocompatibility complex  
 CC (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal  
 CC colon, kidney, liver or brain tissue. The presence or level of expression  
 CC of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis  
 CC tumours  
 XX  
 XX Sequence 9 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x AAG67167 (1-9)  
 QY 516 CAGCTTTCCTGTGATGTGATCAGC 542  
 Db 1 GlnLeuSerLeuLeuMetTrpIleThr 9  
 RESULT 381  
 AAG67185  
 ID AAG67185 standard; peptide; 9 AA.  
 AC AAG67185;  
 XX  
 DT 13-NOV-2001 (first entry)  
 XX  
 DE Cancer testis tumour antigen NY-ESO-1 derived peptide.  
 XX  
 KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
 KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
 KW cancer; testis tumour.  
 XX  
 OS Homo sapiens.  
 XX  
 PN WO200162917-A1.  
 XX  
 PD 30-AUG-2001.  
 XX  
 PF 22-JAN-2001; 2001WO-US002126.  
 XX  
 PR 22-FEB-2000; 2000US-00510635.  
 XX  
 PA (LUDW-) LUDWIG INST CANCER RES.  
 XX  
 PI Lethe B, Boon-Falleur T;  
 XX  
 DR WPI; 2001-550091/61.  
 XX  
 PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
 PT for diagnosing testicular tumors.  
 XX  
 XX Example 13; Page 26; 50pp; English.  
 XX  
 CC AAG67169-AAG67206 represent peptides which are derived from cancer testis  
 CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
 CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at  
 CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
 CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
 CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
 CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
 CC may be assayed for the diagnosis of cancer, especially testis tumours  
 XX  
 XX Sequence 9 AA;  
 SQ  
 Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAG67185 (1-9)  
QY 315 CTGAGTTCTACCTGCCATGCTTTC 341  
DB 1 LeuGIuPheTyrluAlaMetProhe 9  
RESULT 382  
AAG67178  
ID AAG67178 standard; peptide; 9 AA.  
AC AAG67178;  
XX 13-NOV-2001 (first entry)  
DT 13-NOV-2001 (first entry)  
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.  
DE Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
KW cancer; testis tumour.  
XX Homo sapiens.  
XX OS  
XX WO200162917-A1.  
XX 30-AUG-2001.  
XX 22-JAN-2001; 2001WO-US002126.  
XX 22-FEB-2000; 2000US-00510635.  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX Leche B, Boon-Falleur T;  
XX WPI; 2001-550091/61.  
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
PT for diagnosing testicular tumors.  
XX Example 13; Page 26; 50pp; English.  
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis  
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at  
CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
CC may be assayed for the diagnosis of cancer, especially testis tumours  
XX Sequence 9 AA;  
SQ  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAG67178 (1-9)  
QY 339 TTGGGACACCCATGGAAGACAGCTG 365  
DB 1 PheAlaThrProMetGluAlaGluLeu 9  
RESULT 383  
AAG67171  
ID AAG67171 standard; peptide; 9 AA.  
XX

AC AAG67171;  
XX 13-NOV-2001 (first entry)  
DT 13-NOV-2001 (first entry)  
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.  
DE Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
KW cancer; testis tumour.  
XX Homo sapiens.  
XX OS  
XX WO200162917-A1.  
XX 30-AUG-2001.  
XX 22-JAN-2001; 2001WO-US002126.  
XX 22-FEB-2000; 2000US-00510635.  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX Leche B, Boon-Falleur T;  
XX WPI; 2001-550091/61.  
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful  
PT for diagnosing testicular tumors.  
XX Example 13; Page 26; 50pp; English.  
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis  
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at  
CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
CC may be assayed for the diagnosis of cancer, especially testis tumours  
XX Sequence 9 AA;  
SQ  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAG67171 (1-9)  
QY 528 TTGATGTGATCAGCAGTGTCTTCG 554  
DB 1 LeuMetTrpIleThrGlnCysPheLeu 9  
RESULT 384  
AAG67175  
ID AAG67175 standard; peptide; 9 AA.  
AC AAG67175;  
XX 13-NOV-2001 (first entry)  
DT 13-NOV-2001 (first entry)  
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.  
DE Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;  
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;  
KW cancer; testis tumour.  
XX Homo sapiens.  
XX OS  
XX WO200162917-A1.  
XX

```
XX 30-AUG-2001.
PD
XX
XX 22-JAN-2001; 2001WO-US002126.
PF
XX
XX 22-FEB-2000; 2000US-00510635.
PR
XX
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Lethe B, Boon-Falleur T;
PI
XX
XX WPI; 2001-550091/61.
DR
XX
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
XX
XX Example 13; Page 26; 50pp; English.
PS
XX
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
CC
XX
XX Sequence 9 AA;
SQ
XX
XX
XX Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAG67175 (1-9)
QY 231 GCCCGCGGGGTCCGATGCGGCGCG 257
DB 1 AlaProArgGlyProHisGlyGlyAla 9
RESULT 385
AAG67177
ID AAG67177 standard; peptide; 9 AA.
XX
XX AAG67177;
AC
XX
XX 13-NOV-2001 (first entry)
DT
XX
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.
DE
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
XX Homo sapiens.
OS
XX
XX WO200162917-A1.
PN
XX
XX 30-AUG-2001.
PD
XX
XX 22-JAN-2001; 2001WO-US002126.
PF
XX
XX 22-FEB-2000; 2000US-00510635.
PR
XX
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Lethe B, Boon-Falleur T;
PI
XX
XX WPI; 2001-550091/61.
DR
XX
```

```
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
XX
XX Example 13; Page 26; 50pp; English.
PS
XX
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
CC
XX
XX Sequence 9 AA;
SQ
XX
XX
XX Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x AAG67177 (1-9)
QY 390 GCCCGCGGGTCCGATGCGGCGGTG 416
DB 1 AlaProProlenProValProGlyVal 9
RESULT 386
AAG67170
ID AAG67170 standard; peptide; 9 AA.
XX
XX AAG67170;
AC
XX
XX 13-NOV-2001 (first entry)
DT
XX
XX Cancer testis tumour antigen NY-ESO-1 derived peptide.
DE
XX
XX Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KW HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
XX Homo sapiens.
OS
XX
XX WO200162917-A1.
PN
XX
XX 30-AUG-2001.
PD
XX
XX 22-JAN-2001; 2001WO-US002126.
PF
XX
XX 22-FEB-2000; 2000US-00510635.
PR
XX
XX (LUDW-) LUDWIG INST CANCER RES.
PA
XX
XX Lethe B, Boon-Falleur T;
PI
XX
XX WPI; 2001-550091/61.
DR
XX
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
XX
XX Example 13; Page 26; 50pp; English.
PS
XX
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
CC
```



```
XX SQ Sequence 9 AA:
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67170 (1-9)

OY 525 CTGTTGATGTGATCAGCAGGCTT 551
Db 1 LeuLeuMeetrPllethGInCysPhe 9

RESULT 387
AAG67174 ID AAG67174 standard; peptide; 9 AA.
XX
AC AAG67174;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KM Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI: 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA:
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67174 (1-9)
```

```
OY 288 GGGGCGAGGGGCGGAGAGCGGCTG 314
Db 1 GlyAlaArgGlyProGInSerArgLeu 9

RESULT 388
AAG67184 ID AAG67184 standard; peptide; 9 AA.
XX
AC AAG67184;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
KM Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
KM HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
KM cancer; testis tumour.
XX
OS Homo sapiens.
XX
PN WO200162917-A1.
XX
PD 30-AUG-2001.
XX
PF 22-JAN-2001; 2001WO-US002126.
XX
PR 22-FEB-2000; 2000US-00510635.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Lethe B, Boon-Falleur T;
XX
DR WPI: 2001-550091/61.
XX
PT Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful
PT for diagnosing testicular tumors.
XX
PS Example 13; Page 26; 50pp; English.
XX
CC AAG67169-AAG67206 represent peptides which are derived from cancer testis
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
CC leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at
CC least one human leukocyte antigen (HLA) binding peptide, which binds to
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,
CC liver or brain tissue. The presence or level of expression of NY-ESO-1
CC may be assayed for the diagnosis of cancer, especially testis tumours
XX
SQ Sequence 9 AA:
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAG67184 (1-9)

OY 288 GGGGCGAGGGGCGGAGAGCGGCTG 314
Db 1 GlyAlaArgGlyProGInSerArgLeu 9

RESULT 389
AAG67187 ID AAG67187 standard; peptide; 9 AA.
XX
AC AAG67187;
XX
DT 13-NOV-2001 (first entry)
XX
DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
```

|    |  |
|----|--|
| XX | Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen; HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour; cancer; testis tumour.   |
| XX | Homo sapiens.  |
| XX | WO200162917-A1.  |
| XX | 30-AUG-2001.   |
| XX | 22-JAN-2001; 2001WO-US002126.  |
| XX | 22-FEB-2000; 2000US-00510635.  |
| XX | (LUDW-) LUDWIG INST CANCER RES.  |
| XX | Lethe B, Boon-Falleur T;   |
| XX | WPI; 2001-550091/61.   |
| XX | Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful for diagnosing testicular tumors.   |
| XX | Example 13; Page 26; 50pp; English.  |
| XX | AAG67169-AAG67206 represent peptides which are derived from cancer testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at least one human leukocyte antigen (HLA) binding peptide, which binds to Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal colon, kidney, liver or brain tissue. The presence or level of expression of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis tumours         |
| XX | Sequence 9 AA;   |
| XX | Alignment Scores:  |
| XX | Pred. No.: 816      Length: 9  |
| XX | Score: 9.00      Matches: 9  |
| XX | Percent Similarity: 100.00%      Conservative: 0   |
| XX | Best Local Similarity: 100.00%      Mismatches: 0  |
| XX | Query Match: 5.00%      Indels: 0  |
| XX | DB: 1      Gaps: 0   |
| XX | US-10-023-182-1 (1-752) x AAG67187 (1-9)   |
| XX | Oy      357      GCAGAGCTGGCCCGCAGAGCCTGGCC 383  |
| XX | Db      1      AAG67182 standard; peptide; 9 AA.   |
| XX | 1      AAG67182;      AAG67182   |
| XX | DT      13-NOV-2001 (first entry)  |
| XX | DE      Cancer testis tumour antigen NY-ESO-1 derived peptide.   |
| XX | KW      Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen; HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour; cancer; testis tumour.   |
| XX | XX      Homo sapiens.  |
| XX | OS      WO200162917-A1.  |
| XX | PN      30-AUG-2001.   |
| XX | PD      22-JAN-2001; 2001WO-US002126.  |
| XX | PF      22-FEB-2000; 2000US-00510635.  |
| XX | PP      (LUDW-) LUDWIG INST CANCER RES.  |
| XX | PS      Lethe B, Boon-Falleur T;   |
| XX | PT      WPI; 2001-550091/61.   |
| XX | PT      Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful for diagnosing testicular tumors.   |
| XX | PS      Example 13; Page 26; 50pp; English.  |
| XX | CC      AAG67169-AAG67206 represent peptides which are derived from cancer testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at least one human leukocyte antigen (HLA) binding peptide, which binds to Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal colon, kidney, liver or brain tissue. The presence or level of expression of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis tumours |
| XX | CC      Sequence 9 AA;   |
| XX | SQ      Alignment Scores:  |
| XX | Pred. No.: 816      Length: 9  |
| XX | Score: 9.00      Matches: 9  |
| XX | Percent Similarity: 100.00%      Conservative: 0   |
| XX | Best Local Similarity: 100.00%      Mismatches: 0  |
| XX | Query Match: 5.00%      Indels: 0  |
| XX | DB: 1      Gaps: 0   |
| XX | US-10-023-182-1 (1-752) x AAG67187 (1-9)   |
| XX | Oy      357      GCAGAGCTGGCCCGCAGAGCCTGGCC 383  |
| XX | Db      1      AAG67182 standard; peptide; 9 AA.   |
| XX | 1      AAG67182;      AAG67182   |
| XX | DT      13-NOV-2001 (first entry)  |
| XX | DE      Cancer testis tumour antigen NY-ESO-1 derived peptide.   |
| XX | KW      Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen; HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour; cancer; testis tumour.   |
| XX | XX      Homo sapiens.  |
| XX | OS      WO200162917-A1.  |
| XX | PN      30-AUG-2001.   |
| XX | PD      22-JAN-2001; 2001WO-US002126.  |
| XX | PF      22-FEB-2000; 2000US-00510635.  |
| XX | PP      (LUDW-) LUDWIG INST CANCER RES.  |
| XX | PS      Lethe B, Boon-Falleur T;   |
| XX | PT      WPI; 2001-550091/61.   |
| XX | PT      Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful for diagnosing testicular tumors.   |
| XX | PS      Example 13; Page 26; 50pp; English.  |
| XX | CC      AAG67169-AAG67206 represent peptides which are derived from cancer testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at least one human leukocyte antigen (HLA) binding peptide, which binds to Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal colon, kidney, liver or brain tissue. The presence or level of expression of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis tumours |
| XX | CC      Sequence 9 AA;   |
| XX | SQ      Alignment Scores:  |
| XX | Pred. No.: 816      Length: 9  |
| XX | Score: 9.00      Matches: 9  |
| XX | Percent Similarity: 100.00%      Conservative: 0   |
| XX | Best Local Similarity: 100.00%      Mismatches: 0  |
| XX | Query Match: 5.00%      Indels: 0  |
| XX | DB: 1      Gaps: 0   |
| XX | US-10-023-182-1 (1-752) x AAG67187 (1-9)   |
| XX | Oy      357      GCAGAGCTGGCCCGCAGAGCCTGGCC 383  |
| XX | Db      1      AAG67182 standard; peptide; 9 AA.   |
| XX | 1      AAG67182;      AAG67182   |
| XX | DT      13-NOV-2001 (first entry)  |
| XX | DE      Cancer testis tumour antigen NY-ESO-1 derived peptide.   |
| XX | KW      Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen; HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour; cancer; testis tumour.   |
| XX | XX      Homo sapiens.  |
| XX | OS      WO200162917-A1.  |
| XX | PN      30-AUG-2001.   |
| XX | PD      22-JAN-2001; 2001WO-US002126.  |
| XX | PF      22-FEB-2000; 2000US-00510635.  |
| XX | PP      (LUDW-) LUDWIG INST CANCER RES.  |
| XX | PS      Lethe B, Boon-Falleur T;   |
| XX | PT      WPI; 2001-550091/61.   |
| XX | PT      Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful for diagnosing testicular tumors.   |
| XX | PS      Example 13; Page 26; 50pp; English.  |
| XX | CC      AAG67169-AAG67206 represent peptides which are derived from cancer testis tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to at least one human leukocyte antigen (HLA) binding peptide, which binds to Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal colon, kidney, liver or brain tissue. The presence or level of expression of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis tumours |
| XX | CC      Sequence 9 AA;   |
| XX | SQ      Alignment Scores:  |
| XX | Pred. No.: 816      Length: 9  |
| XX | Score: 9.00      Matches: 9  |
| XX | Percent Similarity: 100.00%      Conservative: 0   |
| XX | Best Local Similarity: 100.00%      Mismatches: 0  |
| XX | Query Match: 5.00%      Indels: 0  |
| XX | DB: 1      Gaps: 0   |
| XX | US-10-023-182-1 (1-752) x AAG67187 (1-9)   |
| XX | Oy      357      GCAGAGCTGGCCCGCAGAGCCTGGCC 383  |
| XX | Db      1      AAG67182 standard; peptide; 9 AA.   |

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XX 22-FEB-2000; 2000US-00510635.
XX
XX (LUDW-) LUDWIG INST CANCER RES.
XX
XX Lethe B, Boon-Falleur T;
XX
XX WPI; 2001-550091/61.
XX
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAG2-2) useful
XX for diagnosing testicular tumors.
XX
XX Example 13; Page 26; 50pp; English.
XX
XX AAG67169-AAG67206 represent peptides which are derived from cancer testis
XX tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human
XX leukocyte antigens (HLAs). NY-ESO-1 is a molecule that is processed to a
XX least one human leukocyte antigen (HLA) binding peptide, which binds to a
XX Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is
XX expressed in tumour mRNA and in testis, but not normal colon, kidney,
XX liver or brain tissue. The presence or level of expression of NY-ESO-1
XX may be assayed for the diagnosis of cancer, especially testis tumours
XX
XX
XX Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX Gaps: 0
XX
XX US-10-023-182-1 (1-752) x AAG67182 (1-9)
XX
XX Oy 405 GTGCCAGGGGTGCTCTGAAGAGATTG 431
XX |||||
XX 1 ValProGlyValLeuLeuGluPhe 9
XX
XX RESULT 391
XX AAG67192
XX ID AAG67192 standard; peptide; 9 AA.
XX
XX AAG67192;
XX
XX DT 13-NOV-2001 (first entry)
XX
XX DE Cancer testis tumour antigen NY-ESO-1 derived peptide.
XX
XX KW Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
XX HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
XX cancer; testis tumour.
XX
XX KW Homo sapiens.
XX
XX OS
XX PN MO200162917-A1.
XX
XX PD 30-AUG-2001.
XX
XX PF 22-JAN-2001; 2001WO-US002126.
XX
XX PR 22-FEB-2000; 2000US-00510635.
XX
XX PA (LUDW-) LUDWIG INST CANCER RES.
XX
XX Lethe B, Boon-Falleur T;
XX
XX WPI; 2001-550091/61.
XX
XX Genomic sequences of tumor associated antigen EY-ESO-1 (LAG2-2) useful
XX for diagnosing testicular tumors.
XX
XX Example 13; Page 26; 50pp; English.
XX

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CC AAG67169-AAG67206 represent peptides which are derived from cancer testis  
CC tumour antigen NY-ESO-1 (also called LAGE-2). The peptides bind to human  
CC leukocyte antigens (HLA). NY-ESO-1 is a molecule that is processed to at  
CC least one human leukocyte antigen (HLA) binding peptide, which binds to  
CC Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is  
CC expressed in tumour mRNA and in testis, but not normal colon, kidney,  
CC liver or brain tissue. The presence or level of expression of NY-ESO-1  
CC may be assayed for the diagnosis of cancer, especially testis tumours  
XX  
SQ Sequence 9 AA;  
  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAG67192 (1-9)  
QY 537 ATCAGCAGTGTCTTCTGCGCGTGT 563  
Db 1 ILeThrgInCySpHeLeuProValPhe 9  
  
RESULT 392  
AAU01546  
ID AAU01546 standard; peptide; 9 AA.  
XX  
AC AAU01546;  
XX  
DT 18-JUL-2001 (first entry)  
XX  
DE Human NY-ESO-1 tumour rejection antigen precursor peptide #2.  
XX  
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;  
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;  
KW human leukocyte antigen-determining region; disease progression;  
KW disease regression; disease onset; body tissue; body fluid; enzyme label;  
KW radioactive label; monoclonal antibody.  
XX  
OS Homo sapiens.  
XX  
PN WO200123560-A2.  
XX  
PD 05-APR-2001.  
XX  
PF 26-SEP-2000; 2000WO-US026411.  
XX  
PR 29-SEP-1999; 99US-00408036.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Tureci O, Sahin U, Pfeundschnuh M;  
XX  
DR WPI, 2001-266156/27.  
XX  
PT Polypeptides binding to major histocompatibility complex class II human  
PT leukocyte antigen-determining region molecule having amino acid sequence  
PT found in tumor rejection antigen precursor used for stimulating  
PT proliferation of helper T cells.  
XX  
PS Example 21; Page 31; 62pp; English.  
XX  
CC The sequence represents a human NY-ESO-1 tumour rejection antigen  
CC precursor fragment. NY-ESO-1 and SSX-2 polypeptides, or fragments of,  
CC bind to major histocompatibility complex (MHC) Class II molecules such as  
CC human leukocyte antigen-determining region (HLA-DR) molecules and  
CC stimulate proliferation of helper T cells. The peptides can be  
CC administered to an HLA-DR positive subject in order to stimulate the  
CC helper T cells. An MHC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed  
CC on the surface of a cell or present in free form is useful for this  
CC stimulation. The nucleic acid is useful for screening for a cancerous

CC condition, which involves contacting a subject sample to a cell line  
CC transfected with the immunoreactive cell (helper T cell), where  
CC interaction is indicative of cancer. In addition, a sample from a patient  
CC (for example, a body fluid or tissue) can be monitored for the amount of  
CC the complex present in the bloodstream. This is useful for determining  
CC regression, progression or onset of a cancerous condition. The method  
CC involves contacting the sample with a radioactive labelled or enzyme  
CC labelled monoclonal antibody which specifically binds with the complex  
XX  
SQ Sequence 9 AA;  
  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
  
US-10-023-182-1 (1-752) x AAU01546 (1-9)  
QY 375 AGCCTGGCCGAGATGCCCGCCGCTT 401  
Db 1 SerLeuAlaGlnAspAlaProPheLeu 9  
  
RESULT 393  
AAU01545  
ID AAU01545 standard; peptide; 9 AA.  
XX  
AC AAU01545;  
XX  
DT 18-JUL-2001 (first entry)  
XX  
DE Human NY-ESO-1 tumour rejection antigen precursor peptide #1.  
XX  
KW NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;  
KW major histocompatibility complex; helper T cell; HLA-DR; cancer;  
KW human leukocyte antigen-determining region; disease progression;  
KW disease regression; disease onset; body tissue; body fluid; enzyme label;  
KW radioactive label; monoclonal antibody.  
XX  
OS Homo sapiens.  
XX  
PN WO200123560-A2.  
XX  
PD 05-APR-2001.  
XX  
PF 26-SEP-2000; 2000WO-US026411.  
XX  
PR 29-SEP-1999; 99US-00408036.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Tureci O, Sahin U, Pfeundschnuh M;  
XX  
DR WPI, 2001-266156/27.  
XX  
PT Polypeptides binding to major histocompatibility complex class II human  
PT leukocyte antigen-determining region molecule having amino acid sequence  
PT found in tumor rejection antigen precursor used for stimulating  
PT proliferation of helper T cells.  
XX  
PS Example 21; Page 31; 62pp; English.  
XX  
CC The sequence represents a human NY-ESO-1 tumour rejection antigen  
CC precursor fragment. NY-ESO-1 and SSX-2 polypeptides, or fragments of,  
CC bind to major histocompatibility complex (MHC) Class II molecules such as  
CC human leukocyte antigen-determining region (HLA-DR) molecules and  
CC stimulate proliferation of helper T cells. The peptides can be  
CC administered to an HLA-DR positive subject in order to stimulate the  
CC helper T cells. An MHC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed  
CC on the surface of a cell or present in free form is useful for this  
CC stimulation. The nucleic acid is useful for screening for a cancerous

CC condition, which involves contacting a subject sample to a cell line  
 CC transfected with the immunoreactive cell (helper T cell), where  
 CC interaction is indicative of cancer. In addition, a sample from a patient  
 CC (for example, a body fluid or tissue) can be monitored for the amount of  
 CC the complex present in the bloodstream. This is useful for determining  
 CC regression, progression or onset of a cancerous condition. The method  
 CC involves contacting the sample with a radioactive labelled or enzyme  
 CC labelled monoclonal antibody which specifically binds with the complex  
 XX

Sequence 9 AA:

Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAU01545 (1-9)

QY 309 CGCCTGTTGAGTTCTACCTGCGCATG 335

Db 1 ArgLeuLeuGluPheTryLeuAlaMet 9

RESULT 394

AAU01537

AAU01537 standard; peptide; 9 AA.

XX 18-JUN-2001 (first entry)

DE Cytolytic T cell line stimulator peptide #2.

XX NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II;

KM major histocompatibility complex; helper T cell; HLA-DR; cancer;

KW human leukocyte antigen-determining region; disease progression;

XX disease regression; disease onset; body tissue; body fluid; enzyme label;

XX radioactive label; monoclonal antibody; cytolitic T cell line.

OS Homo sapiens.

PN WO200123560-A2.

PD 05-APR-2001.

PF 26-SEP-2000; 2000WO-US026411.

PR 29-SEP-1999; 99US-00408036.

XX (LUDW-) LUDWIG INST CANCER RES.

PA Tureci O, Sahin U, Pfreundschuh M;

XX WPI; 2001-266156/27.

XX Polypeptides binding to major histocompatibility complex class II human

XX leukocyte antigen-determining region molecule having amino acid sequence

XX found in tumor rejection antigen precursor used for stimulating

XX proliferation of helper T cells.

XX Example 12; Page 17; 62pp; English.

XX The sequence represents a human NY-ESO-1 tumour rejection antigen

XX precursor fragment which efficiently stimulates cytolitic T cell lines.

XX NY-ESO-1 and SSX-2 polypeptides, or fragments of, bind to major

XX histocompatibility complex (MHC) Class II molecules such as human

XX leukocyte antigen-determining region (HLA-DR) molecules and stimulate

XX proliferation of helper T cells. The peptides can be administered to an

XX HLA-DR positive subject in order to stimulate the helper T cells. An MHC

XX class II HLA-DR-NY-ESO-1/SSX-2 complex expressed on the surface of a cell

XX or present in free form is useful for this stimulation. The nucleic acid

CC is useful for screening for a cancerous condition, which involves  
 CC contacting a subject sample to a cell line transfected with the  
 CC immunoreactive cell (helper T cell), where interaction is indicative of  
 CC cancer. In addition, a sample from a patient (for example, a body fluid  
 CC or tissue) can be monitored for the amount of the complex present in the  
 CC bloodstream. This is useful for determining regression, progression or  
 CC onset of a cancerous condition. The method involves contacting the sample  
 CC with a radioactive labelled or enzyme labelled monoclonal antibody which  
 CC specifically binds with the complex  
 XX

Sequence 9 AA:

Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAU01537 (1-9)

QY 522 TCCTGTTGAGTGCATCAGCAGTGC 548

Db 1 SerLeuLeuMetTryPheThrGlnCys 9

RESULT 395

AAB31330

AAB31330 standard; peptide; 9 AA.

XX 20-APR-2001 (first entry)

DE Exemplary antigen characteristic of tumours and derived from NY-ESO-1.

XX MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;

KW MAGE-A1 HLA class II-binding protein; vaccine.

XX Homo sapiens.

PN WO200078806-A1.

PD 28-DEC-2000.

PF 14-JUN-2000; 2000WO-US016287.

PR 18-JUN-1999; 99US-00336091.

XX (LUDW-) LUDWIG INST CANCER RES.

PA Van Snick J, Lethe B, Chaux P, Boon-Falleur T, Van Der Bruggen P;

XX WPI; 2001-102698/11.

XX Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and

XX are presented to the class II molecules, useful for inducing immune

XX response and treating cancers characterized by expression of MAGE-A1.

XX Disclosure; Page 32; 78pp; English.

XX AAB31302-59 represent exemplary antigens which are characteristic of

XX tumours. They can be used to enhance the immune response of vaccines

XX comprising peptides derived from human MAGE-A1 HLA (human leukocyte

XX antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA

XX binding protein stimulate the activity and proliferation of CD4+ T

XX lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic

XX agent for diagnosing a disorder characterized by expression of MAGE-A1.

XX The protein is used for treating a disorder characterized by expression

XX of MAGE-A1 such as cancers e.g. melanoma, squamous cell carcinomas,

XX colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides

XX derived from the MAGE-A1 HLA binding protein are useful in the production

XX of anti-tumour vaccines

XX SQ Sequence 9 AA;

Alignment Scores:

Pred. No.: 816 Length: 9

Score: 9.00 Matches: 9

Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.00% Indels: 0

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB31329 (1-9)

OY 516 CAGCTTCCCTGTGATGATGACG 542

DB 1 GlnLeuSerLeuMetTptIleThr 9

RESULT 396

AAB31329

ID AAB31329 standard; peptide; 9 AA.

XX

AC AAB31329;

XX

DT 20-APR-2001 (first entry)

XX

DE Exemplary antigen characteristic of tumours and derived from NY-ESO-1.

XX

KM MAGE-A1; HLA; human leukocyte antigen; CD4+ T lymphocyte; cancer;

KM MAGE-A1 HLA class II-binding protein; vaccine.

XX

OS Homo sapiens.

XX

PN WO200078806-A1.

XX

PD 28-DEC-2000.

XX

PF 14-JUN-2000; 2000WO-US016287.

XX

PR 18-JUN-1999; 99US-00336091.

XX

PA (LUDM-) LUDWIG INST CANCER RES.

XX

PI Van Snick J, Lethe B, Chaux P, Boon-Falleur T, Van Der Bruggen P;

XX

XX WPI; 2001-102698/11.

XX

PT Novel MAGE-A1 human leukocyte antigen class II peptides which bind to and

PT are presented to the class II molecules, useful for inducing immune

PT response and treating cancers characterized by expression of MAGE-A1.

XX

PS Disclosure; Page 32; 78pp; English.

XX

CC AAB31302-59 represent exemplary antigens which are characteristic of

CC tumours. They can be used to enhance the immune response of vaccines

CC comprising peptides derived from human MAGE-A1 HLA (human leukocyte

CC antigen) class II-binding protein. Peptides derived from the MAGE-A1 HLA

CC binding protein stimulate the activity and proliferation of CD4+ T

CC lymphocytes. The MAGE-A1 HLA binding protein is useful as a diagnostic

CC agent for diagnosing a disorder characterized by expression of MAGE-A1.

CC The protein is used for treating a disorder characterized by expression

CC of MAGE-A1 such as cancers e.g. melanoma, squamous cell carcinomas,

CC colorectal carcinomas, osteosarcomas, and lymphocytic leukemias. Peptides

CC derived from the MAGE-A1 HLA binding protein are useful in the production

CC of anti-tumour vaccines

XX

SQ Sequence 9 AA;

Alignment Scores:

Pred. No.: 816 Length: 9

Score: 9.00 Matches: 9

Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.00% Indels: 0

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB31329 (1-9)

OY 522 TCCTGTGATGATGATGACGACGTC 548

DB 1 SerLeuMetTptIleThrGlnCys 9

RESULT 397

AAB85299

ID AAB85299 standard; peptide; 9 AA.

XX

AC AAB85299;

XX

DT 17-SEP-2001 (first entry)

XX

DE HLA-A2 binding NY-ESO-1 peptide #2.

XX

KM NY-ESO-1; human leukocyte antigen; HLA; lysis; cytolytic T cell; CTL;

KM HLA-A2; T-cell sorter; tumor; immune tetramer.

XX

OS Homo sapiens.

XX

PN WO200136453-A2.

XX

PD 25-MAY-2001.

XX

PF 08-NOV-2000; 2000WO-US042010.

XX

PR 15-NOV-1999; 99US-00440621.

PR 25-FEB-2000; 2000US-00514036.

PR 29-SEP-2000; 2000US-00676005.

XX

PA (LUDM-) LUDWIG INST CANCER RES.

PA (UYOX-) UNIV OXFORD.

XX

PI Valmori D, Cerottini J, Romero P, Cerundolo V;

XX

XX WPI; 2001-451454/48.

XX

DR

XX

PT Novel isolated NY-ESO-1 nonapeptide useful for determining if a cell

PT presents human leukocyte antigen-A2 molecule on its surface, binds to

PT human leukocyte antigen molecules and provokes lysis by cytolytic T

PT cells.

XX

XX Example 1; Page 4; 38pp; English.

XX

PS

CC The invention provides NY-ESO-1 peptide derivatives which bind to human

CC leukocyte antigen (HLA) molecules and provokes lysis by cytolytic T cells

CC (CTLs). The NY-ESO-1 nonapeptide is of formula SLIMWITOX, where X is an

CC amino acid having an uncharged polar side chain. The NY-ESO-1 peptide

CC derivatives are useful for determining if a cell presents an HLA-A2

CC molecule on its surface, by contacting a sample containing the cell with

CC the peptide or its derivative, and determining binding between them,

CC where the binding is indicative of HLA-A2 on the surface of the cell. The

CC NY-ESO-1 peptides and analogues are useful therapeutically, for

CC administration to a patient who is HLA-A2 positive and expresses NY-ESO-1

CC in connection with the pathology, as well as diagnostically, i.e. to

CC determine if HLA-A2 positive cells are present, or if relevant CTLs are

CC present. They are also useful for determining the presence of CTLs in a

CC sample. The peptides are useful as T-cell sorters, when incorporated into

CC immune tetramers. The present sequence represents a NY-ESO-1 peptide that

CC can bind to HLA-A2 molecule

XX

SQ Sequence 9 AA;

Alignment Scores:

Pred. No.: 816 Length: 9

Score: 9.00 Matches: 9

Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.00% Indels: 0

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAB85299 (1-9)

QY 522 TCCTGTTGATGTGATCAGCAGTGC 548  
 |||  
 Db 1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 398  
 AAB85300  
 ID AAB85300 standard; peptide; 9 AA.  
 XX  
 AC AAB85300;  
 XX  
 DT 17-SEP-2001 (first entry)  
 XX  
 DE HLA-A2 binding NY-ESO-1 peptide #3.  
 XX  
 KM NY-ESO-1; human leukocyte antigen; HLA; lysis; cytolytic T cell; CTL;  
 KM HLA-A2; T-cell sorter; tumor; immune tetramer.  
 XX  
 OS Homo sapiens.  
 XX  
 PN MO200136453-A2.  
 PD 25-MAY-2001.  
 XX  
 PF 08-NOV-2000; 2000MO-US042010.  
 XX  
 PR 15-NOV-1999; 99US-00440621.  
 PR 25-FEB-2000; 2000US-00514036.  
 PR 29-SEP-2000; 2000US-00676005.  
 XX  
 PA (LUDM-) LUDMIG INST CANCER RES.  
 PA (UYOX-) UNIV OXFORD.  
 XX  
 PI Valmori D, Cerottini J, Romero P, Cerundolo V;  
 XX  
 DR WPI; 2001-451454/48.  
 XX  
 PT Novel isolated NY-ESO-1 nonapeptide useful for determining if a cell  
 PT presents human leukocyte antigen-A2 molecule on its surface, binds to  
 PT human leukocyte antigen molecules and provokes lysis by cytolytic T  
 PT cells.  
 XX  
 PS Example 1; Page 4; 38pp; English.  
 XX  
 CC The invention provides NY-ESO-1 peptide derivatives which bind to human  
 CC leukocyte antigen (HLA) molecules and provokes lysis by cytolytic T cells  
 CC (CTLs). The NY-ESO-1 nonapeptide is of formula SLNMTWYQX, where X is an  
 CC amino acid having an uncharged polar side chain. The NY-ESO-1 peptide  
 CC derivatives are useful for determining if a cell presents an HLA-A2  
 CC molecule on its surface, by contacting a sample containing the cell with  
 CC the peptide or its derivative, and determining binding between them.  
 CC where the binding is indicative of HLA-A2 on the surface of the cell. The  
 CC NY-ESO-1 peptides and analogues are useful therapeutically, for  
 CC administration to a patient who is HLA-A2 positive and expresses NY-ESO-1  
 CC in connection with the pathology, as well as diagnostically, i.e. to  
 CC determine if HLA-A2 positive cells are present, or if relevant CTLs are  
 CC present. They are also useful for determining the presence of CTLs in a  
 CC sample. The peptides are useful as T-cell sorters, when incorporated into  
 CC immune tetramers. The present sequence represents a NY-ESO-1 peptide that  
 CC can bind to HLA-A2 molecule  
 XX  
 SQ Sequence 9 AA;

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAB85300 (1-9)

QY 516 CAGCTTCCCTGTGATGTGATCAGC 542  
 |||  
 Db 1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 399  
 AAB82017  
 ID AAB82017 standard; peptide; 9 AA.  
 XX  
 AC AAB82017;  
 XX  
 DT 12-JUN-2001 (first entry)  
 XX  
 DE HLA- binding peptide derived from NY-ESO-1.  
 XX  
 KM Multiple myeloma; tumor rejection antigen precursor; MMGE; BAGE; GAGE;  
 KM LAGE; NY-ESO-1; PRAME; DAGE; human; HLA.  
 XX  
 OS Homo sapiens.  
 XX  
 PN US6210886-B1.  
 PD 03-APR-2001.  
 XX  
 PF 30-OCT-1998; 98US-00183931.  
 XX  
 PR 04-FEB-1998; 98US-00018422.  
 XX  
 PA (LUDM-) LUDMIG INST CANCER RES.  
 XX  
 PI Van Baren N, Brasseur F, Boon-Falleur T;  
 XX  
 DR WPI; 2001-289628/30.  
 XX  
 PT Detecting multiple myeloma in a patient, comprises contacting a nucleic  
 PT acid containing sample taken from bone marrow or blood with a  
 PT hybridization probe specific for a tumor rejection antigen precursor.  
 XX  
 PS Example 3; Col 11; 16pp; English.  
 XX  
 CC The present invention relates to a method for detecting multiple myeloma.  
 CC The method comprises contacting a nucleic acid containing a sample taken  
 CC from a bone marrow or blood of a patient, with a hybridisation probe  
 CC specific for a tumour rejection antigen precursor. Tumour rejection  
 CC antigen precursors used in the present invention are the MMGE family,  
 CC BAGE, GAGE, LAGE, NY-ESO-1 and PRAME (previously referred to as DAGE).  
 CC Expression of the tumour rejection antigen precursor indicates possible  
 CC multiple myeloma in the patient. The method can also be used for  
 CC monitoring the disease progress and course of therapeutic regime. The  
 CC present sequence is a peptide derived from a tumour rejection antigen  
 CC precursor, which was used in the method of the present invention  
 XX  
 SQ Sequence 9 AA;

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAB82017 (1-9)

QY 522 TCCTGTTGATGTGATCAGCAGTGC 548  
 |||  
 Db 1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 400  
 AAB82018  
 ID AAB82018 standard; peptide; 9 AA.

AC AAB82018;  
XX  
DT 12-JUN-2001 (first entry)  
XX  
DE HLA - binding peptide derived from NY-ESO-1.  
XX  
KM Multiple myeloma; tumour rejection antigen precursor; MAGE; BAGE; GAGE;  
KW LAGE; NY-ESO-1; PRAME; DAGB; human; HLA.  
XX  
OS Homo sapiens.  
XX  
PN US6210886-B1.  
XX  
PD 03-APR-2001.  
XX  
PF 30-OCT-1998; 98US-00183931.  
XX  
PR 04-FEB-1998; 98US-00018422.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Van Baren N, Brasseur F, Boon-Falleur T;  
XX  
DR WPI; 2001-289628/30.  
XX  
PT Detecting multiple myeloma in a patient, comprises contacting a nucleic  
PT acid containing sample taken from bone marrow or blood with a  
PT hybridization probe specific for a tumor rejection antigen precursor.  
XX  
PS Example 3; Col 11; 16pp; English.  
XX  
CC The present invention relates to a method for detecting multiple myeloma.  
CC The method comprises contacting a nucleic acid containing a sample taken  
CC from a bone marrow or blood of a patient, with a hybridisation probe  
CC specific for a tumour rejection antigen precursor. Tumour rejection  
CC antigen precursors used in the present invention are the MAGE family,  
CC BAGE, GAGE, LAGE, NY-ESO-1 and PRAME (previously referred to as DAGB).  
CC Expression of the tumour rejection antigen precursor indicates possible  
CC multiple myeloma in the patient. The method can also be used for  
CC monitoring the disease progress and course of therapeutic regime. The  
CC present sequence is a peptide derived from a tumour rejection antigen  
CC precursor, which was used in the method of the present invention  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAB82018 (1-9)  
QY 516 CAGCTTCCGTGATGATGATGACG 542  
DB 1 GlnLeuSerLeuLeuMetTrpIleThr 9  
RESULT 401  
AAE06850  
ID AAE06850 standard; peptide; 9 AA.  
XX  
AC AAE06850;  
XX  
DT 16-OCT-2001 (first entry)  
XX  
DE Human NY-ESO-1 antigenic peptide #2.  
XX  
KM MAGE antigenic peptide; Human leukocyte antigen; HLA-B35; HLA-B44;  
KW Tumour cell; immunostimulant; antigen presentation; cancer; melanoma;  
CD8+ cytotoxic T lymphocyte; colorectal; prostate; gastric carcinoma;  
myeloma; brain tumour; sarcoma; seminoma; ovarian tumour; cytostatic;  
KW

KW gene therapy; tumour rejection antigen; TRA; human; NY-ESO-1; MHC;  
KW major histocompatibility complex.  
XX  
OS Homo sapiens.  
XX  
PN WO200153833-A1.  
XX  
PD 26-JUL-2001.  
XX  
PF 19-JAN-2001; 2001WO-US002008.  
XX  
PR 20-JAN-2000; 2000US-0177242P.  
XX  
PR 25-OCT-2000; 2000US-0243212P.  
XX  
PA (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Luiten R, Boon-Falleur T, Van Der Bruggen P, Stroobant V;  
XX  
PI Demotte N, Schultz E;  
XX  
DR WPI; 2001-488724/53.  
XX  
PT Functional variants and isolated mimetics of a MAGE-A1 HLA-B35 or HLA-B44  
PT binding peptide, or of a MAGE-A3 HLA-B35 binding peptide, used in  
PT diagnosis and treatment of a disorder characterized by expression of MAGE  
PT -A1 or -A3.  
XX  
PS Disclosure; Page 28; 103pp; English.  
XX  
CC The invention relates to functional variants and isolated mimetics of a  
CC MAGE-A1 human leukocyte antigen (HLA)-B35 or HLA-B44 binding peptide, or  
CC of a MAGE-A3 HLA-B35 binding peptide, identified by methods described in  
CC the specification. MAGE genes encode tumour rejection antigens (TRAs)  
CC presented to T lymphocytes by HLA-B35 and HLA-B44 molecules. The MAGE  
CC antigenic peptide acts by binding to HLA molecules on tumour cells and  
CC stimulating recognition of these cells and thus signalling them to the  
CC immune system for destruction. The peptide when presented by HLA molecule  
CC induces the activation and stimulation of CD8+ cytotoxic T lymphocytes.  
CC The MAGE antigenic peptide is used to treat and diagnose disorders  
CC characterised by expression of MAGE-A1 or -A3. Disorders include cancers  
CC e.g melanomas, oesophageal, lung, head and neck, breast, colorectal,  
CC prostate, renal, bladder, hepatocellular, papillary thyroid and gastric  
CC carcinomas, myelomas, brain tumours, sarcomas, seminomas, and ovarian  
CC tumours. The present sequence is human NY-ESO-1 tumour associated  
CC antigenic peptide presented by major histocompatibility complex (MHC) HLA  
CC -A2. The antigenic peptide is used in combination with peptides of the  
CC invention for inducing an immune response  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE06850 (1-9)  
QY 522 TCCCTGTTGATGATGATGATGACG 548  
DB 1 SerLeuLeuMetTrpIleThrGlnCys 9  
RESULT 402  
AAE06851  
ID AAE06851 standard; peptide; 9 AA.  
XX  
AC AAE06851;  
XX  
DT 16-OCT-2001 (first entry)  
XX  
DE Human NY-ESO-1 antigenic peptide #3.  
XX

KM MAGE antigenic peptide; Human leukocyte antigen; HLA-B35; HLA-B44;  
KM tumour cell; immunostimulant; antigen presentation; cancer; melanoma;  
KM CD8+ cytotoxic T lymphocyte; colorectal; prostate; gastric carcinoma;  
KM myeloma; brain tumour; sarcoma; seminoma; ovarian tumour; cytostatic;  
KM gene therapy; tumour rejection antigen; TRA; human; NY-ESO-1; MHC;  
KM major histocompatibility complex.  
XX  
OS Homo sapiens.  
XX  
PN WO200153833-A1.  
XX  
PD 26-JUL-2001.  
XX  
PF 19-JAN-2001; 2001WO-US002008.  
XX  
PR 20-JAN-2000; 2000US-0177242P.  
PR 25-OCT-2000; 2000US-0243212P.  
XX  
PA (LUDM-) LUDMIG INST CANCER RES.  
XX  
PI Luiten R, Boon-Faljeur T, Van Der Bruggen P, Stroobant V;  
PI Demotte N, Schultz E;  
XX  
DR WPI; 2001-488724/53.  
XX  
PT Functional variants and isolated mimetics of a MAGE-A1 HLA-B35 or HLA-B44  
PT binding peptide, or of a MAGE-A3 HLA-B35 binding peptide, used in  
PT diagnosis and treatment of a disorder characterized by expression of MAGE  
PT -A1 or -A3.  
XX  
PS Disclosure; Page 28; 103pp; English.  
XX  
XX The invention relates to functional variants and isolated mimetics of a  
CC MAGE-A1 human leukocyte antigen (HLA)-B35 or HLA-B44 binding peptide, or  
CC of a MAGE-A3 HLA-B35 binding peptide, identified by methods described in  
CC the specification. MAGE genes encode tumour rejection antigens (TRAs)  
CC presented to T lymphocytes by HLA-B35 and HLA-B44 molecules. The MAGE  
CC antigenic peptide acts by binding to HLA molecules on tumour cells and  
CC stimulating recognition of these cells and thus signalling them to the  
CC immune system for destruction. The peptide when presented by HLA molecule  
CC induces the activation and stimulation of CD8+ cytotoxic T lymphocytes.  
CC The MAGE antigenic peptide is used to treat and diagnose disorders  
CC characterised by expression of MAGE-A1 or -A3. Disorders include cancers  
CC e.g. melanomas, oesophagaeal, lung, head and neck, breast, colorectal,  
CC prostate, renal, bladder, hepatocellular, papillary thyroid and gastric  
CC carcinomas, myelomas, brain tumours, sarcomas, seminomas, and ovarian  
CC tumours. The present sequence is human NY-ESO-1 tumour associated  
CC antigenic peptide presented by major histocompatibility complex (MHC) HLA  
CC -A2. The antigenic peptide is used in combination with peptides of the  
CC invention for inducing an immune response  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE06851 (1-9)  
OY 516 CAGCTTTCCTGTGATGTGATCAG 542  
DB 1 GlnLeuSerLeuLeuMetTrpIleThr 9  
RESULT 403  
ID AAE26810 standard; peptide; 9 AA.  
XX AAE26810;  
XX

DT 13-DEC-2002 (first entry)  
XX  
DE Human HLA-A2.1 restricted NY-ESO-1 peptide epitope #3.  
XX  
KM Human; cancer; breast cancer; ovarian cancer; melanoma; cell therapy;  
KM epitope; human leucocyte antigen; HLA-A2.1.  
XX  
OS Homo sapiens.  
XX  
PN WO200265992-A2.  
XX  
PD 29-AUG-2002.  
XX  
PF 19-FEB-2002; 2002WO-US005748.  
XX  
PR 20-FEB-2001; 2001US-0270252P.  
XX  
PA (ORTH ) ORTHO-MCNEIL PHARM INC.  
XX  
PI Degraw J, Moriarty A, Leturcq DJ, Jackson MR, Peterson PA;  
PI Heiskala M;  
XX  
DR WPI; 2002-667033/71.  
XX  
PT Treating a subject with cancer comprises combining the CD+8 cells, which  
PT are stimulated with non-naturally occurring antigen-presenting cell line,  
PT with adherent blood monocytes and inoculating the subject with CD8+  
PT suspension.  
XX  
PS Example 2; Page 95; 99pp; English.  
XX  
XX The invention relates to a method of treating a subject with cancer. The  
CC method involves combining the CD+8 cells, which are stimulated with non  
CC naturally occurring antigen-presenting cell (mAPC) line, with adherent  
CC blood monocytes and inoculating the subject with CD8+ suspension. The  
CC method is useful for treating cancer e.g. ovarian cancer, breast cancer  
CC and melanoma etc. It is also useful in cell therapy. The present sequence  
CC is human leukocyte antigen A2 (HLA-A2).1 restricted peptide epitope used  
CC to treat breast and ovarian cancer  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE26810 (1-9)  
OY 516 CAGCTTTCCTGTGATGTGATCAG 542  
DB 1 GlnLeuSerLeuLeuMetTrpIleThr 9  
RESULT 404  
ID AAE26808 standard; peptide; 9 AA.  
XX AAE26808;  
XX  
AC AAE26808;  
XX  
DT 13-DEC-2002 (first entry)  
XX  
DE Human HLA-A2.1 restricted NY-ESO-1 peptide epitope #1.  
XX  
KM Human; cancer; breast cancer; ovarian cancer; melanoma; cell therapy;  
KM epitope; human leucocyte antigen; HLA-A2.1.  
XX  
OS Homo sapiens.  
XX  
PN WO200265992-A2.  
XX



PD 29-AUG-2002.  
XX  
PF 19-FEB-2002; 2002WO-US005748.  
XX  
PR 20-FEB-2001; 2001US-0270252P.  
XX  
XX (ORTH ) ORTHO-MCNEIL PHARM INC.  
XX  
PI Degraw J, Moriarty A, Letureq DJ, Jackson MR, Peterson PA;  
PI Helsinki M;  
XX  
DR WPI; 2002-667033/71.  
XX  
PT Treating a subject with cancer comprises combining the CD+8 cells, which  
PT are stimulated with non-naturally occurring antigen-presenting cell line,  
PT with adherent blood monocytes and inoculating the subject with CD8+  
PT suspension.  
XX  
PS Example 2; Page 94; 9pp; English.  
XX  
CC The invention relates to a method of treating a subject with cancer. The  
CC method involves combining the CD+8 cells, which are stimulated with non  
CC naturally occurring antigen-presenting cell (mAPC) line, with adherent  
CC blood monocytes and inoculating the subject with CD8+ suspension. The  
CC method is useful for treating cancer e.g. ovarian cancer, breast cancer  
CC and melanoma etc. It is also useful in cell therapy. The present sequence  
CC is human leukocyte antigen A2 (HLA-A2).1 restricted peptide epitope used  
CC to treat breast and ovarian cancer  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE26808 (1-9)  
QY 522 TCCTGTGATGTGATCAGCAGTGC 548  
Db 1 SerleuWetTrpletThrGlnCys 9  
RESULT 405  
AAO21432  
ID AAO21432 standard; peptide; 9 AA.  
XX  
AC AAO21432;  
XX  
XX 06-AUG-2002 (first entry)  
XX  
DE Isolated peptide for binding to HLA-Cw6 molecule.  
XX  
XX Immunostimulant; human leukocyte antigen; HLA-Cw3; HLA-Cw6; cytolitic;  
KW proliferation; T cell; HLA-Cw3/HLA-Cw6.  
XX  
XX Homo sapiens.  
OS  
XX  
PN WO200226778-A2.  
XX  
PD 04-APR-2002.  
XX  
PF 24-SEP-2001; 2001WO-US029920.  
XX  
PR 26-SEP-2000; 2000US-00670456.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Gnjatic S, Old LJ, Nagata Y, Jager E, Chen Y, Knuth A;  
XX  
DR WPI; 2002-435193/46.

XX  
PT Novel isolated human peptide that binds to human leukocyte antigen-Cw3 or  
PT HLA-Cw6, useful for stimulating proliferation of cytolitic T cells.  
XX  
XX  
XX Claim 2; Page 14; 21pp; English.  
PS  
XX  
XX The invention relates to an isolated peptide which binds to a human  
CC leukocyte antigen (HLA)-Cw3 molecule or binds to a HLA-Cw6 molecule. The  
CC isolated peptide provokes proliferation of T cells specific to a complex  
CC of the isolated peptide and HLA-Cw3, or the isolated peptide and HLA-Cw6.  
CC The isolated peptide is useful for stimulating proliferation of a  
CC cytolitic T cell response, by contacting a T cell containing sample with  
CC a cell which presents a complex of HLA-Cw3/HLA-Cw6 and the isolated  
CC peptide of the invention on its surface. This sequence represents the  
XX isolated peptide which binds to the HLA-Cw6 molecule of the invention  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAO21432 (1-9)  
QY 291 GCCAGGGGCGGAGAGCGCGCTGCTT 317  
Db 1 AlaHrgLypProGluSerArGleuLeu 9  
RESULT 406  
AAO21431  
ID AAO21431 standard; peptide; 9 AA.  
XX  
AC AAO21431;  
XX  
XX 06-AUG-2002 (first entry)  
XX  
DE Isolated peptide for binding to HLA-Cw3 molecule.  
XX  
XX Immunostimulant; human leukocyte antigen; HLA-Cw3; HLA-Cw6; cytolitic;  
KW proliferation; T cell; HLA-Cw3/HLA-Cw6.  
XX  
XX Homo sapiens.  
OS  
XX  
PN WO200226778-A2.  
XX  
PD 04-APR-2002.  
XX  
PF 24-SEP-2001; 2001WO-US029920.  
XX  
PR 26-SEP-2000; 2000US-00670456.  
XX  
XX (LUDW-) LUDWIG INST CANCER RES.  
XX  
PI Gnjatic S, Old LJ, Nagata Y, Jager E, Chen Y, Knuth A;  
XX  
DR WPI; 2002-435193/46.  
XX  
PT Novel isolated human peptide that binds to human leukocyte antigen-Cw3 or  
PT HLA-Cw6, useful for stimulating proliferation of cytolitic T cells.  
XX  
XX  
XX Claim 1; Page 14; 21pp; English.  
XX  
XX The invention relates to an isolated peptide which binds to a human  
CC leukocyte antigen (HLA)-Cw3 molecule or binds to a HLA-Cw6 molecule. The  
CC isolated peptide provokes proliferation of T cells specific to a complex  
CC of the isolated peptide and HLA-Cw3, or the isolated peptide and HLA-Cw6.  
CC The isolated peptide is useful for stimulating proliferation of a  
CC cytolitic T cell response, by contacting a T cell containing sample with  
CC a cell which presents a complex of HLA-Cw3/HLA-Cw6 and the isolated

CC peptide of the invention on its surface. This sequence represents the  
CC isolated peptide which binds to the HLA-Cw3 molecule of the invention  
XX  
SQ Sequence 9 AA;

## Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAO21431 (1-9)

QY 327 CTCGCCATGCTTTGCGCAGACCCATG 353

Db 1 LeuAlaMetProPheAlaThrPromet 9

RESULT 407

AAO21430 AAO21430 standard; peptide; 9 AA.

XX AAO21430;

DT 06-AUG-2002 (first entry)

DE HLA-A2 restricted peptide sequence.

XX Immunostimulant; human leukocyte antigen; HLA-Cw3; HLA-Cw6; cytolytic;

KM proliferation; T cell; HLA-Cw3/HLA-Cw6; HLA-A2.

XX Homo sapiens.

XX WO200226778-A2.

XX PD 04-APR-2002.

XX PF 24-SEP-2001; 2001WO-US029920.

XX PR 26-SEP-2000; 2000US-00670456.

XX PA (LUDW-) LUDWIG INST CANCER RES.

XX PI Gnjatic S, Old LJ, Nagata Y, Jager E, Chen Y, Knuth A;

XX DR WPI; 2002-435193/46.

XX PT Novel isolated human peptide that binds to human leukocyte antigen-Cw3 or

XX PS HLA-Cw6, useful for stimulating proliferation of cytolytic T cells.

XX CC Example 3; Page 9; 21pp; English.

XX CC The invention relates to an isolated peptide which binds to a human

XX CC leukocyte antigen (HLA)-Cw3 molecule or binds to a HLA-Cw6 molecule. The

XX CC isolated peptide provokes proliferation of T cells specific to a complex

XX CC of the isolated peptide and HLA-Cw3, or the isolated peptide and HLA-Cw6.

XX CC The isolated peptide is useful for stimulating proliferation of a

XX CC cytolytic T cell response, by contacting a T cell containing sample with

XX CC a cell which presents a complex of HLA-Cw3/HLA-Cw6 and the isolated

XX CC peptide of the invention on its surface. This sequence represents an HLA-

XX CC A2 restricted peptide sequence relating to the invention

SQ Sequence 9 AA;

## Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAO21430 (1-9)

QY 522 TCCTGTGATGATCGATCCAGCTGC 548

Db 1 SerLeuMetTrpIleThrGlnCys 9

RESULT 408

AAE31113 AAE31113 standard; peptide; 9 AA.

XX AAE31113;

AC AAE31113;

XX 24-FEB-2003 (first entry)

XX DE Human ctgag peptide #4.

XX DE Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.

XX OS Homo sapiens.

XX PN WO200272627-A2.

XX PD 19-SEP-2002.

XX PF 11-MAR-2002; 2002WO-EP002666.

XX PR 09-MAR-2001; 2001US-0274250P.

XX PR 14-MAY-2001; 2001US-0290353P.

XX PR 18-MAY-2001; 2001US-0291610P.

XX PA (CALL-) CALLISTOGEN AG.

XX PI Wrede P, Walden P, Eichler-Wertens M, Filter M;

XX DR WPI; 2002-759836/82.

XX PT Providing, identifying or optimizing peptides for inducing cytotoxic T-

XX PT lymphocytes and for treating cancer, comprises selecting conserved

XX PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the

XX PS protein.

XX PS Disclosure; Page 7; 32pp; English.

XX CC The invention relates to a method for providing, identifying or/and

XX CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses

XX CC of the obtained peptides for vaccination. The method is useful for

XX CC providing, identifying and/or optimising peptides that are useful in

XX CC manufacturing a pharmaceutical composition for the induction of cytotoxic

XX CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer

XX CC or viral infections. The invention is also used in gene therapy. The

XX CC present sequence is human ctgag peptide used to illustrate the method of

XX CC the invention

SQ Sequence 9 AA;

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x AAE31113 (1-9)

QY 447 ATACTGACTATCCGATGATCGCTGCA 473

Db 1 IleuThrIleArgLeuThrAlaAla 9

RESULT 409

AAE31112 AAE31112 standard; peptide; 9 AA.

XX

AC AAE31112;  
XX  
DT 24-FEB-2003 (first entry)  
XX  
DE Human ctg peptide #3.  
XX  
KM Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.  
XX  
OS Homo sapiens.  
XX  
FN WO200272627-A2.  
XX  
PD 19-SEP-2002.  
XX  
PF 11-MAR-2002; 2002WO-EP002666.  
XX  
PR 09-MAR-2001; 2001US-0274250P.  
PR 14-MAY-2001; 2001US-0290353P.  
PR 18-MAY-2001; 2001US-0291610P.  
XX  
PA (CALL-) CALLISTOGEN AG.  
XX  
PI Wrede P, Walden P, Eichler-Mertens M, Filter M;  
XX  
DR WPI; 2002-759836/82.  
XX  
PT Providing, identifying or optimizing peptides for inducing cytotoxic T-  
PT lymphocytes and for treating cancer, comprises selecting conserved  
PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the  
PT protein.  
XX  
PS Disclosure; Page 7; 32pp; English.  
XX  
CC The invention relates to a method for providing, identifying or/and  
CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses  
CC of the obtained peptides for vaccination. The method is useful for  
CC providing, identifying and/or optimising peptides that are useful in  
CC manufacturing a pharmaceutical composition for the induction of cytotoxic  
CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer  
CC or viral infections. The invention is also used in gene therapy. The  
CC present sequence is human ctg peptide used to illustrate the method of  
CC the invention  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE31112 (1-9)  
QY 444 AACATACGACTATCCGACTGCTGCT 470  
DB 1 AsnIleuNrIleArgLeuNrIleA 9  
RESULT 410  
AAE31114  
ID AAE31114 standard; peptide; 9 AA.  
XX  
AC AAE31114;  
XX  
DT 24-FEB-2003 (first entry)  
XX  
DE Human ctg peptide #5.  
XX  
KM Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.  
XX  
OS Homo sapiens.  
XX

FN WO200272627-A2.  
XX  
PD 19-SEP-2002.  
XX  
PF 11-MAR-2002; 2002WO-EP002666.  
XX  
PR 09-MAR-2001; 2001US-0274250P.  
PR 14-MAY-2001; 2001US-0290353P.  
PR 18-MAY-2001; 2001US-0291610P.  
XX  
PA (CALL-) CALLISTOGEN AG.  
XX  
PI Wrede P, Walden P, Eichler-Mertens M, Filter M;  
XX  
DR WPI; 2002-759836/82.  
XX  
PT Providing, identifying or optimizing peptides for inducing cytotoxic T-  
PT lymphocytes and for treating cancer, comprises selecting conserved  
PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the  
PT protein.  
XX  
PS Disclosure; Page 7; 32pp; English.  
XX  
CC The invention relates to a method for providing, identifying or/and  
CC optimising peptides which induce cytotoxic T-lymphocytes and to the uses  
CC of the obtained peptides for vaccination. The method is useful for  
CC providing, identifying and/or optimising peptides that are useful in  
CC manufacturing a pharmaceutical composition for the induction of cytotoxic  
CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer  
CC or viral infections. The invention is also used in gene therapy. The  
CC present sequence is human ctg peptide used to illustrate the method of  
CC the invention  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE31114 (1-9)  
QY 453 ACTATCGACTGCTGCTGACGACAC 479  
DB 1 ThrIleArgLeuThrAlaIleAspHis 9  
RESULT 411  
AAE31115  
ID AAE31115 standard; peptide; 9 AA.  
XX  
AC AAE31115;  
XX  
DT 24-FEB-2003 (first entry)  
XX  
DE Human ctg peptide #6.  
XX  
KM Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.  
XX  
OS Homo sapiens.  
XX  
FN WO200272627-A2.  
XX  
PD 19-SEP-2002.  
XX  
PF 11-MAR-2002; 2002WO-EP002666.  
XX  
PR 09-MAR-2001; 2001US-0274250P.  
PR 14-MAY-2001; 2001US-0290353P.  
PR 18-MAY-2001; 2001US-0291610P.  
XX

PA (CALL-) CALLISTOGEN AG.  
XX  
XX Wrede P, Walden P, Eichler-Wertens M, Filter M;  
XX WPI; 2002-759836/82.  
XX  
XX Providing, identifying or optimizing peptides for inducing cytotoxic T-  
XX lymphocytes and for treating cancer, comprises selecting conserved  
XX regions in antigenic proteins and identifying CD8+ T-cell epitopes in the  
XX protein.  
XX  
XX Disclosure: Page 7; 32pp; English.  
XX  
XX The invention relates to a method for providing, identifying or/and  
XX optimizing peptides which induce cytotoxic T-lymphocytes and to the uses  
XX of the obtained peptides for vaccination. The method is useful for  
XX providing, identifying and/or optimizing peptides that are useful in  
XX manufacturing a pharmaceutical composition for the induction of cytotoxic  
XX T-lymphocytes, and for the prevention, treatment or diagnosis of cancer  
XX or viral infections. The invention is also used in gene therapy. The  
XX present sequence is human ctag peptide used to illustrate the method of  
XX the invention  
XX  
XX Sequence 9 AA;  
SQ  
XX  
XX Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE31115 (1-9)  
QY 468 GGTGGAGACACCGCCCACTGACGCTC 494  
Db 1 AlaAlaAspHisArgGlnLeuGlnLeu 9  
XX  
XX RESULT 412  
AAE31110  
XX ID AAE31110 standard; peptide; 9 AA.  
XX  
XX AAE31110;  
XX  
XX 24-FEB-2003 (first entry)  
XX  
XX Human ctag peptide #1.  
XX  
XX Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.  
XX  
XX Homo sapiens.  
XX  
XX WO200272627-A2.  
XX  
XX 19-SEP-2002.  
XX  
XX 11-MAR-2002; 2002WO-EP002666.  
XX  
XX 09-MAR-2001; 2001US-0274250P.  
XX  
XX 14-MAY-2001; 2001US-0290353P.  
XX  
XX 18-MAY-2001; 2001US-0291610P.  
XX  
XX (CALL-) CALLISTOGEN AG.  
XX  
XX Wrede P, Walden P, Eichler-Wertens M, Filter M;  
XX WPI; 2002-759836/82.  
XX  
XX Providing, identifying or optimizing peptides for inducing cytotoxic T-  
XX lymphocytes and for treating cancer, comprises selecting conserved  
XX regions in antigenic proteins and identifying CD8+ T-cell epitopes in the  
XX protein.

XX  
XX Disclosure: Page 7; 32pp; English.  
XX  
XX The invention relates to a method for providing, identifying or/and  
XX optimizing peptides which induce cytotoxic T-lymphocytes and to the uses  
XX of the obtained peptides for vaccination. The method is useful for  
XX providing, identifying and/or optimizing peptides that are useful in  
XX manufacturing a pharmaceutical composition for the induction of cytotoxic  
XX T-lymphocytes, and for the prevention, treatment or diagnosis of cancer  
XX or viral infections. The invention is also used in gene therapy. The  
XX present sequence is human ctag peptide used to illustrate the method of  
XX the invention  
XX  
XX Sequence 9 AA;  
SQ  
XX  
XX Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAE31110 (1-9)  
QY 360 GAGCTGGCCCGCAGAGCCTGCGCCAG 386  
Db 1 GluLeuAlaArgSerLeuAlaGln 9  
XX  
XX RESULT 413  
AAE31111  
XX ID AAE31111 standard; peptide; 9 AA.  
XX  
XX AAE31111;  
XX  
XX 24-FEB-2003 (first entry)  
XX  
XX Human ctag peptide #2.  
XX  
XX Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.  
XX  
XX Homo sapiens.  
XX  
XX WO200272627-A2.  
XX  
XX 19-SEP-2002.  
XX  
XX 11-MAR-2002; 2002WO-EP002666.  
XX  
XX 09-MAR-2001; 2001US-0274250P.  
XX  
XX 14-MAY-2001; 2001US-0290353P.  
XX  
XX 18-MAY-2001; 2001US-0291610P.  
XX  
XX (CALL-) CALLISTOGEN AG.  
XX  
XX Wrede P, Walden P, Eichler-Wertens M, Filter M;  
XX WPI; 2002-759836/82.  
XX  
XX Providing, identifying or optimizing peptides for inducing cytotoxic T-  
XX lymphocytes and for treating cancer, comprises selecting conserved  
XX regions in antigenic proteins and identifying CD8+ T-cell epitopes in the  
XX protein.  
XX  
XX Disclosure: Page 7; 32pp; English.  
XX  
XX The invention relates to a method for providing, identifying or/and  
XX optimizing peptides which induce cytotoxic T-lymphocytes and to the uses  
XX of the obtained peptides for vaccination. The method is useful for  
XX providing, identifying and/or optimizing peptides that are useful in  
XX manufacturing a pharmaceutical composition for the induction of cytotoxic  
XX T-lymphocytes, and for the prevention, treatment or diagnosis of cancer  
XX or viral infections. The invention is also used in gene therapy. The

CC present sequence is human cttag peptide used to illustrate the method of  
 CC the invention  
 XX  
 SQ Sequence 9 AA;

## Alignment Scores:

Score: 816 Length: 9  
 Pred. No.: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE31111 (1-9)

Qy 414 GTGCTTGAAGAGTTCACTGTGTCC 440

Db 1 ValLeuLeuLysGluPheThrValSer 9

## RESULT 414

AAE31371  
 ID AAE31371 standard; peptide; 9 AA.

XX AAE31371;

XX 24-FEB-2003 (first entry)

XX Human CTAG peptide.

XX Human; T-lymphocyte; vaccine; viral infection; gene therapy; cancer.

XX Homo sapiens.

XX WO200272627-A2.

XX 19-SEP-2002.

XX 11-MAR-2002; 2002WO-EP002666.

XX 09-MAR-2001; 2001US-0274250P.

XX 14-MAY-2001; 2001US-0230353P.

XX 18-MAY-2001; 2001US-0291610P.

XX (CALL-) CALLISTOGEN AG.

XX Wrede P, Walden P, Eichler-Wertens M, Filter M;

XX WPI; 2002-7539836/82.

XX Providing, identifying or optimizing peptides for inducing cytotoxic T-lymphocytes and for treating cancer, comprises selecting conserved PT regions in antigenic proteins and identifying CD8+ T-cell epitopes in the protein.

XX Disclosure; Page 13; 32pp; English.

XX The invention relates to a method for providing, identifying or/and optimising peptides which induce cytotoxic T-lymphocytes and to the uses of the obtained peptides for vaccination. The method is useful for CC providing, identifying and/or optimising peptides that are useful in CC manufacturing a pharmaceutical composition for the induction of cytotoxic CC T-lymphocytes, and for the prevention, treatment or diagnosis of cancer CC or viral infections. The invention is also used in gene therapy. The CC present sequence is human CTAG peptide used to illustrate the method of the invention

XX Sequence 9 AA;

## Alignment Scores:

Score: 816 Length: 9  
 Pred. No.: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAE31371 (1-9)

Qy 414 GTGCTTGAAGAGTTCACTGTGTCC 440

Db 1 ValLeuLeuLysGluPheThrValSer 9

## RESULT 415

ABP74293  
 ID ABP74293 standard; peptide; 9 AA.

XX ABP74293;

XX 03-FEB-2003 (first entry)

XX Human NY-ESO-1 epitope SEQ ID NO:177.

XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity; T cell.

XX Homo sapiens.

XX WO200281646-A2.

XX 17-OCT-2002.

XX 04-APR-2002; 2002WO-US011101.

XX 06-APR-2001; 2001US-0282211P.

XX 07-NOV-2001; 2001US-0337017P.

XX 07-MAR-2002; 2002US-0363210P.

XX (CTL1-) CTL IMMUNOTHERAPIES CORP.

XX Simard JLL, Diamond DC, Liu L, Xie Z;

XX WPI; 2003-067516/06.

XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid PT encoding the peptides, that are useful epitopes of target-associated PT antigens.

XX Claim 1; Page 18; 352pp; English.

XX The present invention describes an isolated epitope (I) and an epitope CC cluster. Also described is a vaccine or immunotherapeutic composition CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for CC treating an animal, by administering to an animal the vaccine or CC immunotherapeutic composition. VC is also useful for evaluating CC immunogenicity of a vaccine or immunotherapeutic composition, by CC administering VC to an HLA-transgenic animal and evaluating CC immunogenicity based on a characteristic of the animal, or by in vitro CC primary stimulation of a T cell and evaluating immunogenicity. (I) is CC useful for determining specific T cell frequency, by contacting T cells CC with a MHC-peptide complex, and further comprises ELISPOT analysis, CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to CC ABP74173 represent sequences used in the exemplification of the present CC invention

XX Sequence 9 AA;

## Alignment Scores:

Score: 816 Length: 9  
 Pred. No.: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABP74293 (1-9)

QY 333 ATGCGTTTCGACACCCATGAGCA 359  
DB 1 MetProPheAlaThrProMetClnla 9

RESULT 416  
ABP74313  
ID ABP74313 standard; peptide; 9 AA.  
AC ABP74313;  
XX  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:197.  
XX  
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KM T cell.  
XX  
OS Homo sapiens.  
XX  
PN WO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JUL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-067518/06.  
XX  
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
XX  
XX  
PS Claim 1; Page 18; 352pp; English.

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CC invention  
CC  
XX  
SQ Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABP74313 (1-9)

QY 522 TCCTGTTGATGTGATCAGCAGTGC 548  
DB 1 SerLeuLeuMetTrpIleThrGlnCys 9

RESULT 417  
ABP74309  
ID ABP74309 standard; peptide; 9 AA.  
XX  
XX  
AC ABP74309;  
XX  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:193.  
XX  
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KM T cell.  
XX  
OS Homo sapiens.  
XX  
PN WO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
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PI Simard JUL, Diamond DC, Liu L, Xie Z;  
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DR WPI; 2003-067518/06.  
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CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
CC  
XX  
SQ Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABP74309 (1-9)

QY 495 TCATTCAGCTCTCTGTTCCAGCAGCTT 521  
DB 1 SerIleSerSerCysLeuGlnGlnLeu 9

RESULT 418  
ABP74318  
ID ABP74318 standard; peptide; 9 AA.

```
XX ABP74318;
XX
XX 03-FEB-2003 (first entry)
XX
XX Human NY-ESO-1 epitope SEQ ID NO:202.
XX
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
XX T cell.
XX
XX Homo sapiens.
XX
XX WO200281646-A2.
XX
XX 17-OCT-2002.
XX
XX 04-APR-2002; 2002WO-US011101.
XX
XX 06-APR-2001; 2001US-0282211P.
XX 07-NOV-2001; 2001US-0337017P.
XX 07-MAR-2002; 2002US-0363210P.
XX
XX (CTL1-) CTL IMMUNOTHERAPIES CORP.
XX
XX Simard JLL, Diamond DC, Liu L, Xie Z;
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XX WPI; 2003-067518/06.
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XX
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABP74318 (1-9)
XX
XX QY 540 ACGAGTGTCTTTCGCCGCTTTTGG 566
XX DB 1 ThrlGlnCysPheLeuProValPheLeu 9
XX
XX RESULT 419
XX ID ABP74298 standard; peptide; 9 AA.
XX
XX AC ABP74298;
XX
XX 03-FEB-2003 (first entry)
XX
XX
```

```
XX
XX DE Human NY-ESO-1 epitope SEQ ID NO:182.
XX
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
XX T cell.
XX
XX Homo sapiens.
XX
XX WO200281646-A2.
XX
XX 17-OCT-2002.
XX
XX 04-APR-2002; 2002WO-US011101.
XX
XX 06-APR-2001; 2001US-0282211P.
XX 07-NOV-2001; 2001US-0337017P.
XX 07-MAR-2002; 2002US-0363210P.
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XX CC ABP74713 represent sequences used in the exemplification of the present
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XX
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABP74298 (1-9)
XX
XX QY 405 GTGCCAGGCGTCTTCTGAAGAGTTG 431
XX DB 1 ValProGlyValLeuLeuLysGluPhe 9
XX
XX RESULT 420
XX ID ABP74306 standard; peptide; 9 AA.
XX
XX AC ABP74306;
XX
XX 03-FEB-2003 (first entry)
XX
XX Human NY-ESO-1 epitope SEQ ID NO:190.
XX
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
```

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KM T cell.
XX Homo sapiens.
XX WO200281646-A2.
XX
XX 17-OCT-2002.
XX
XX 04-APR-2002; 2002WO-US011101.
XX
XX 06-APR-2001; 2001US-0282211P.
XX 07-NOV-2001; 2001US-0337017P.
XX 07-MAR-2002; 2002US-0363210P.
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XX (CTL1-) CTL IMMUNOTHERAPIES CORP.
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XX Simard JJJ, Diamond DC, Liu L, Xie Z;
XX WPI; 2003-067518/06.
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XX CC ABP74713 represent sequences used in the exemplification of the present
XX invention
XX
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABP74306 (1-9)
XX
XX QY 405 GTGCCAGGCGCTTCTGAGAGGATTC 431
XX DB 1 ValProGlyValIleuLeuIysGluPhe 9
XX
XX RESULT 421
XX ID ABP74286 standard; peptide; 9 AA.
XX
XX AC ABP74286;
XX
XX DT 03-FEB-2003 (first entry)
XX
XX DE Human NY-ESO-1 epitope SEQ ID NO:170.
XX
XX KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
XX T cell.
XX
XX OS Homo sapiens.
XX
XX

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PN WO200281646-A2.
XX
XX 17-OCT-2002.
XX
XX 04-APR-2002; 2002WO-US011101.
XX
XX 06-APR-2001; 2001US-0282211P.
XX 07-NOV-2001; 2001US-0337017P.
XX 07-MAR-2002; 2002US-0363210P.
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XX invention
XX
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABP74286 (1-9)
XX
XX QY 300 CCGGAGAGCGCGCTTGAAGTCTAC 326
XX DB 1 ProGluSerArgLeuLeuGluPheTyr 9
XX
XX RESULT 422
XX ID ABP74294 standard; peptide; 9 AA.
XX
XX AC ABP74294;
XX
XX DT 03-FEB-2003 (first entry)
XX
XX DE Human NY-ESO-1 epitope SEQ ID NO:178.
XX
XX KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
XX T cell.
XX
XX OS Homo sapiens.
XX
XX PN WO200281646-A2.
XX
XX PD 17-OCT-2002.
XX
XX

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PR 04-APR-2002; 2002WO-US011101.
XX
XX 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
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XX invention
XX
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABP74294 (1-9)
XX
XX QY 396 CCGCTTCCCGTCCAGGCGGTCTTG 422
XX DB 1 ProleupProValProGlyValIleuLeu 9
XX
XX RESULT 423
XX ABP74308
XX ID ABP74308 standard; peptide; 9 AA.
XX
XX AC ABP74308;
XX
XX 03-FEB-2003 (first entry)
XX
XX Human NY-ESO-1 epitope SEQ ID NO:192.
XX
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
XX T cell.
XX
XX Homo sapiens.
XX
XX WO200281646-A2.
XX
XX 17-OCT-2002.
XX
XX 04-APR-2002; 2002WO-US011101.
XX
XX 06-APR-2001; 2001US-0282211P.
XX
XX 07-NOV-2001; 2001US-0337017P.
XX
XX 07-MAR-2002; 2002US-0363210P.
XX
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.
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PR 07-MAR-2002; 2002US-0363210P.
XX
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.
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XX invention
XX
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABP74308 (1-9)
XX
XX QY 468 GCTGACAGCCAGCCGCAACTGACGCTC 494
XX DB 1 AlaAlaAspHisArgGlnLeuGlnLeu 9
XX
XX RESULT 424
XX ABP74315
XX ID ABP74315 standard; peptide; 9 AA.
XX
XX AC ABP74315;
XX
XX 03-FEB-2003 (first entry)
XX
XX Human NY-ESO-1 epitope SEQ ID NO:199.
XX
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
XX T cell.
XX
XX Homo sapiens.
XX
XX WO200281646-A2.
XX
XX 17-OCT-2002.
XX
XX 04-APR-2002; 2002WO-US011101.
XX
XX 06-APR-2001; 2001US-0282211P.
XX
XX 07-NOV-2001; 2001US-0337017P.
XX
XX 07-MAR-2002; 2002US-0363210P.
XX
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.
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PI Simard JTL, Diamond DC, Liu L, Xie Z;  
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CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74315 (1-9)  
QY 513 CAGCAGCTTCCCTGTGATGTGATC 539  
ABP74290  
ID 1 GINGINLeuSerLeuMetTrpIle 9  
XX  
AC ABP74290;  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:174.  
XX  
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX  
OS Homo sapiens.  
XX  
PN WO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
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PI Simard JTL, Diamond DC, Liu L, Xie Z;  
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DR WPI; 2003-067518/06.  
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XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74290 (1-9)  
QY 315 CTGAGTCTACCTGCGCAGCCTTTC 341  
ABP74301  
ID 1 LeuGINuPheTyLeuAlaMetCProPhe 9  
XX  
AC ABP74301;  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:185.  
XX  
KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KW T cell.  
XX  
OS Homo sapiens.  
XX  
PN WO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-067518/06.  
XX  
PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
XX  
XX

PS Claim 1; Page 18; 352pp; English.

XX The present invention describes an isolated epitope (I) and an epitope cluster. Also described is a vaccine or immunotherapeutic composition (VC) comprising (I). (I) has cytostatic activity. VC is useful for treating an animal, by administering to an animal the vaccine or immunotherapeutic composition. VC is also useful for evaluating immunogenicity of a vaccine or immunotherapeutic composition, by administering VC to an HLA-transgenic animal and evaluating immunogenicity based on a characteristic of the animal, or by in vitro primary stimulation of a T cell and evaluating immunogenicity. (I) is useful for determining specific T cell frequency, by contacting T cells with a MHC-peptide complex, and further comprises ELISPOT analysis, limiting dilution analysis, flow cytometry, in situ hybridisation and/or polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to ABP74173 represent sequences used in the exemplification of the present invention.

CC Sequence 9 AA;

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x ABP74301 (1-9)

QY 432 ACTGTCGGCAACATCACTATC 458

ABP74303

ID 1 ThrValSerGlyAsnIleuThrIle 9

RESULT 427

ABP74303 standard; peptide; 9 AA.

XX

AC ABP74303;

XX

DT 03-FEB-2003 (first entry)

XX

DE Human NY-ESO-1 epitope SEQ ID NO:187.

XX

KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity; T cell.

XX

OS Homo sapiens.

XX

OS WO200281646-A2.

XX

PN 17-OCT-2002.

XX

PD 04-APR-2002; 2002WO-US011101.

XX

PF 06-APR-2001; 2001US-0282211P.

XX

PR 07-NOV-2001; 2001US-0337017P.

XX

PR 07-MAR-2002; 2002US-0363210P.

XX

PA (CTL1-) CTL IMMUNOTHERAPIES CORP.

XX

PI Simard JUI, Diamond DC, Liu L, Xie Z;

XX

WPI; 2003-067518/06.

XX

PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid encoding the peptides, that are useful epitopes of target-associated antigens.

XX

PS Claim 1; Page 18; 352pp; English.

XX

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CC Sequence 9 AA;

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x ABP74303 (1-9)

QY 411 GGGTCGCTTCTGAGAGGATTCACCTGTC 437

ABP74288

ID 1 GlyValIleuLeuYsGluPheThrVal 9

RESULT 428

ABP74288 standard; peptide; 9 AA.

XX

AC ABP74288;

XX

DT 03-FEB-2003 (first entry)

XX

DE Human NY-ESO-1 epitope SEQ ID NO:172.

XX

KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity; T cell.

XX

OS Homo sapiens.

XX

OS WO200281646-A2.

XX

PN 17-OCT-2002.

XX

PD 04-APR-2002; 2002WO-US011101.

XX

PF 06-APR-2001; 2001US-0282211P.

XX

PR 07-NOV-2001; 2001US-0337017P.

XX

PR 07-MAR-2002; 2002US-0363210P.

XX

PA (CTL1-) CTL IMMUNOTHERAPIES CORP.

XX

PI Simard JUI, Diamond DC, Liu L, Xie Z;

XX

WPI; 2003-067518/06.

XX

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XX

PS Claim 1; Page 17; 352pp; English.

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 CC immunogenicity based on a characteristic of the animal, or by in vitro  
 CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
 CC useful for determining specific T cell frequency, by contacting T cells  
 CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
 CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
 CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
 CC ABP74173 represent sequences used in the exemplification of the present  
 CC invention

SQ Sequence 9 AA;

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x ABP74288 (1-9)

QY 303 GAGAGCGCGCTTGAGTTCTACCTC 329

DB 1 GIuserArgLeuGluPheTyrLeu 9

RESULT 429

ABP74285

ID ABP74285 standard; peptide; 9 AA.

AC ABP74285;

XX 03-FEB-2003 (first entry)

DT 03-FEB-2003 (first entry)

XX Human NY-ESO-1 epitope SEQ ID NO:169.

DE Human NY-ESO-1 epitope SEQ ID NO:169.

XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
 KM T cell.

XX Homo sapiens.

OS

XX WO200281646-A2.

PN 17-OCT-2002.

PD 04-APR-2002; 2002WO-US011101.

PF 06-APR-2001; 2001US-0282211P.

XX PR 07-NOV-2001; 2001US-0337017P.

PR 07-MAR-2002; 2002US-0363210P.

XX PA (CTLI-) CTL IMMUNOTHERAPIES CORP.

XX PA Simard JUI, Diamond DC, Liu L, Xie Z;

PI WPI; 2003-067518/06.

DR

XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
 PT encoding the peptides, that are useful epitopes of target-associated  
 PT antigens.

PS Claim 1; Page 17; 352pp; English.

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 CC immunogenicity based on a characteristic of the animal, or by in vitro  
 CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
 CC useful for determining specific T cell frequency, by contacting T cells

CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
 CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
 CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
 CC ABP74173 represent sequences used in the exemplification of the present  
 CC invention

SQ Sequence 9 AA;

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x ABP74285 (1-9)

QY 297 GGGCCGAGAGCCGCGCTTGAGTTT 323

DB 1 GlyProGluSerArgLeuGluPhe 9

RESULT 430

ABP74314

ID ABP74314 standard; peptide; 9 AA.

AC ABP74314;

XX 03-FEB-2003 (first entry)

DT 03-FEB-2003 (first entry)

XX Human NY-ESO-1 epitope SEQ ID NO:198.

DE Human NY-ESO-1 epitope SEQ ID NO:198.

XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
 KM T cell.

XX Homo sapiens.

OS

XX WO200281646-A2.

PN 17-OCT-2002.

PD 04-APR-2002; 2002WO-US011101.

PF 06-APR-2001; 2001US-0282211P.

XX PR 07-NOV-2001; 2001US-0337017P.

PR 07-MAR-2002; 2002US-0363210P.

XX PA (CTLI-) CTL IMMUNOTHERAPIES CORP.

XX PA Simard JUI, Diamond DC, Liu L, Xie Z;

PI WPI; 2003-067518/06.

DR

XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
 PT encoding the peptides, that are useful epitopes of target-associated  
 PT antigens.

PS Claim 1; Page 18; 352pp; English.

XX The present invention describes an isolated epitope (I) and an epitope  
 CC cluster. Also described is a vaccine or immunotherapeutic composition  
 CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
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 CC immunotherapeutic composition. VC is also useful for evaluating  
 CC immunogenicity of a vaccine or immunotherapeutic composition, by  
 CC administering VC to an HLA-transgenic animal and evaluating  
 CC immunogenicity based on a characteristic of the animal, or by in vitro  
 CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
 CC useful for determining specific T cell frequency, by contacting T cells  
 CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
 CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
 CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
 CC ABP74173 represent sequences used in the exemplification of the present

|   |  |
|---|--|
| CC  | Invention  |
| XX  |  |
| SQ  | Sequence 9 AA;   |
| XX  |  |
| Alignment Scores:   |  |
| Pred. No.:  | 816  |
| Score:  | 9.00   |
| Percent Similarity:   | 100.00%  |
| Best Local Similarity:  | 100.00%  |
| Query Match:  | 5.00%  |
| DB:   | 1  |
| US-10-023-182-1 (1-752) x ABP74314 (1-9)  |  |
| OY  | 501 AGCTCGTGTCTCCAGCAGCTTTCCCTG 527  |
| Db  | <br>1 SerSerCysIreugInginIeulerIeu 9<br>   |
| RESULT 431  |  |
| ID  | ABP74289   |
| XX  | ABP74289 standard; peptide: 9 AA.  |
| AC  | ABP74289;  |
| DT  | 03-FEB-2003 (first entry)  |
| DE  | Human NY-ESO-1 epitope SEQ ID NO:173.  |
| KM  | Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;<br>T cell.   |
| OS  | Homo sapiens.  |
| PN  | WO200281646-A2.  |
| PD  | 17-OCT-2002.   |
| PF  | 04-APR-2002; 2002WO-US011101.  |
| PR  | 06-APR-2001; 2001US-0282211P.<br>07-NOV-2001; 2001US-0337017P.<br>07-MAR-2002; 2002US-0363210P.  |
| PA  | (CTL-) CTL IMMUNOTHERAPIES CORP.   |
| PI  | Simard JTL, Diamond DC, Liu L, Xie Z,  |
| DR  | WPI; 2003-067518/06.   |
| PT  | Novel epitopes useful as vaccines, comprises peptides or nucleic acid<br>encoding the peptides, that are useful epitopes of target-associated<br>antigens. |
| PS  | Claim 1; Page 17; 352pp; English.  |
| XX  |  |
| The present invention describes an isolated epitope (I) and an epitope cluster. Also described is a vaccine or immunotherapeutic composition (VC) comprising (I). (I) has cytostatic activity. VC is useful for treating an animal, by administering to an animal the vaccine or immunotherapeutic composition. VC is also useful for evaluating immunogenicity of a vaccine or immunotherapeutic composition, by administering VC to an HLA-transgenic animal and evaluating immunogenicity based on a characteristic of the animal, or by in vitro primary stimulation of a T cell and evaluating immunogenicity. (I) is useful for determining specific T cell frequency, by contacting T cells with a MHC-peptide complex, and further comprises ELISPOT analysis, limiting dilution analysis, flow cytometry, in situ hybridisation and/or polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to ABP74113 represent sequences used in the exemplification of the present invention |  |
| Sequence 9 AA;  |  |

|  |  |               |   |
|--|--|---------------|---|
| Alignment Scores:                        | 816  | Length:       | 9 |
| Pred. No.:                               |  | Matches:      | 9 |
| Score:..                                 | 9.00   | Mismatches:   | 0 |
| Percent Similarity:                      | 100.00%  | Conservative: | 0 |
| Best local Similarity:                   | 100.00%  | Mismatches:   | 0 |
| Query Match:                             | 5.00%  | Indels:       | 0 |
| DB:                                      | 1  | Gaps:         | 0 |
| US-10-023-182-1 (1-752) x ABP74289 (1-9) |  |               |   |
| Oy                                       | 309 CGCCTGCTGAGTTCTTACTCGGCAGT 335                                       |               |   |
| Db                                       |  |               |   |
|  | 1 Argleuleucinephetylneulawet 9  |               |   |
| RESULT 432                               |  |               |   |
| ABP74472                                 |  |               |   |
| ID                                       | ABP74472 standard; peptide; 9 AA.  |               |   |
| XX                                       |  |               |   |
| AC                                       | ABP74472;  |               |   |
| XX                                       |  |               |   |
| DT                                       | 03-FEB-2003 (first entry)  |               |   |
| XX                                       |  |               |   |
| DE                                       | Human NY-ESO-1 epitope SEQ ID NO:356.                                    |               |   |
| XX                                       |  |               |   |
| KM                                       | Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  |               |   |
| XX                                       | T cell.  |               |   |
| OS                                       | Homo sapiens.  |               |   |
| XX                                       |  |               |   |
| PN                                       | MO200281646-A2.  |               |   |
| PD                                       | 17-OCT-2002.   |               |   |
| XX                                       |  |               |   |
| PF                                       | 04-APR-2002; 2002MO-US011101.  |               |   |
| XX                                       |  |               |   |
| PR                                       | 06-APR-2001; 2001US-0282211P.  |               |   |
| XX                                       |  |               |   |
| PR                                       | 07-NOV-2001; 2001US-0337017P.  |               |   |
| XX                                       |  |               |   |
| PR                                       | 07-MAR-2002; 2002US-0363210P.  |               |   |
| XX                                       |  |               |   |
| PA                                       | (CTL-) CTL IMMUNOTHERAPIES CORP.   |               |   |
| XX                                       |  |               |   |
| PI                                       | Simard JDL, Diamond DC, Liu L, Xie Z;                                    |               |   |
| XX                                       |  |               |   |
| DR                                       | WPI; 2003-067518/06.   |               |   |
| XX                                       |  |               |   |
| PT                                       | Novel epitopes useful as vaccines, comprises peptides or nucleic acid    |               |   |
| XX                                       | encoding the peptides, that are useful epitopes of target-associated     |               |   |
| PT                                       | antigens.  |               |   |
| XX                                       |  |               |   |
| PS                                       | Claim 1; Page 22; 352pp; English.  |               |   |
| XX                                       |  |               |   |
| CC                                       | The present invention describes an isolated epitope (I) and an epitope   |               |   |
| XX                                       | cluster. Also described is a vaccine or immunotherapeutic composition    |               |   |
| CC                                       | (VC) comprising (I). (I) has cytostatic activity. VC is useful for       |               |   |
| CC                                       | treating an animal, by administering to an animal the vaccine or         |               |   |
| CC                                       | immunotherapeutic composition. VC is also useful for evaluating          |               |   |
| CC                                       | immunogenicity of a vaccine or immunotherapeutic composition, by         |               |   |
| CC                                       | administering VC to an HLA-transgenic animal and evaluating              |               |   |
| CC                                       | immunogenicity based on a characteristic of the animal, or by in vitro   |               |   |
| CC                                       | primary stimulation of a T cell and evaluating immunogenicity. (I) is    |               |   |
| CC                                       | useful for determining specific T cell frequency, by contacting T cells  |               |   |
| CC                                       | with a MHC-peptide complex, and further comprises ELISPOT analysis,      |               |   |
| CC                                       | limiting dilution analysis, flow cytometry, in situ hybridisation and/or |               |   |
| CC                                       | polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to    |               |   |
| CC                                       | ABP74113 represent sequences used in the exemplification of the present  |               |   |
| CC                                       | invention  |               |   |
| XX                                       |  |               |   |
| XX                                       |  |               |   |
| SQ                                       | Sequence 9 AA;   |               |   |
| Alignment Scores:                        | 816  | Length:       | 9 |
| Pred. No.:                               |  | Matches:      | 9 |
| Score:                                   | 9.00   | Mismatches:   | 0 |
| Percent Similarity:                      | 100.00%  | Conservative: | 0 |

Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74472 (1-9)  
OY 243 CCGCATGCGCGCGCTTCAGGCGCTG 269  
DB 1 ProHISGLYGLYAlaAlaSerLysLeu 9  
RESULT 433  
ABP74316  
ID ABP74316 standard; peptide; 9 AA.  
XX AC ABP74316;  
XX DT 03-FEB-2003 (first entry)  
XX DE Human NY-ESO-1 epitope SEQ ID NO:200.  
XX KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX KM T cell.  
XX OS Homo sapiens.  
XX PN WO200281646-A2.  
XX PD 17-OCT-2002.  
XX PE 04-APR-2002; 2002WO-US011101.  
XX PR 06-APR-2001; 2001US-0282211P.  
XX PR 07-NOV-2001; 2001US-0337017P.  
XX PR 07-MAR-2002; 2002US-0363210P.  
XX PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX DR WPI; 2003-067518/06.  
XX PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
XX PT encoding the peptides, that are useful epitopes of target-associated  
XX PS Claim 1; Page 18; 352pp; English.  
XX CC The present invention describes an isolated epitope (I) and an epitope  
XX CC cluster. Also described is a vaccine or immunotherapeutic composition  
XX CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
XX CC treating an animal, by administering to an animal the vaccine or  
XX CC immunotherapeutic composition. VC is also useful for evaluating  
XX CC immunogenicity of a vaccine or immunotherapeutic composition, by  
XX CC administering VC to an HLA-transgenic animal and evaluating  
XX CC immunogenicity based on a characteristic of the animal, or by in vitro  
XX CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
XX CC useful for determining specific T cell frequency, by contacting T cells  
XX CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
XX CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
XX CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
XX CC ABP74713 represent sequences used in the exemplification of the present  
XX CC invention  
XX SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABP74316 (1-9)  
OY 504 TCCTGTCCTCAGACGCTTCCCTGTTG 530  
DB 1 SerCysLeuGlnGlnLeuSerLeuLeu 9  
RESULT 434  
ABP74312  
ID ABP74312 standard; peptide; 9 AA.  
XX AC ABP74312;  
XX DT 03-FEB-2003 (first entry)  
XX DE Human NY-ESO-1 epitope SEQ ID NO:196.  
XX KW Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX KM T cell.  
XX OS Homo sapiens.  
XX PN WO200281646-A2.  
XX PD 17-OCT-2002.  
XX PE 04-APR-2002; 2002WO-US011101.  
XX PR 06-APR-2001; 2001US-0282211P.  
XX PR 07-NOV-2001; 2001US-0337017P.  
XX PR 07-MAR-2002; 2002US-0363210P.  
XX PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX DR WPI; 2003-067518/06.  
XX PT Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
XX PT encoding the peptides, that are useful epitopes of target-associated  
XX PS Claim 1; Page 18; 352pp; English.  
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XX CC immunogenicity of a vaccine or immunotherapeutic composition, by  
XX CC administering VC to an HLA-transgenic animal and evaluating  
XX CC immunogenicity based on a characteristic of the animal, or by in vitro  
XX CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
XX CC useful for determining specific T cell frequency, by contacting T cells  
XX CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
XX CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
XX CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74128 to  
XX CC ABP74713 represent sequences used in the exemplification of the present  
XX CC invention  
XX SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74312 (1-9)  
OY 534 TGGATCAGCAGTGTCTTTCGCCGCTG 560  
|||||

```
Db      1  TnpIethrgInCySPheLeuProVal 9
RESULT 435
ABP74471
ID      ABP74471 standard; peptide; 9 AA.
XX
XX      ABP74471;
AC
XX      03-FEB-2003 (first entry)
DT
XX      Human NY-ESO-1 epitope SEQ ID NO:355.
DE
XX      Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW      T cell.
XX
XX      Homo sapiens.
OS
XX      WO200281646-A2.
PN
XX      17-OCT-2002.
PD
XX      04-APR-2002; 2002WO-US011101.
PF
XX      06-APR-2001; 2001US-0282211P.
PR      07-NOV-2001; 2001US-0337017P.
PR      07-MAR-2002; 2002US-0363210P.
XX
XX      (CTLI-) CTL IMMUNOTHERAPIES CORP.
PA
XX      Simard JTL, Diamond DC, Liu L, Xie Z;
PI      WPI; 2003-067518/06.
DR
XX      Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT      encoding the peptides, that are useful epitopes of target-associated
PT      antigens.
XX
XX      Claim 1; Page 22; 352pp; English.
PS
XX      The present invention describes an isolated epitope (I) and an epitope
CC      cluster. Also described is a vaccine or immunotherapeutic composition
CC      (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC      treating an animal, by administering to an animal the vaccine or
CC      immunotherapeutic composition. VC is also useful for evaluating
CC      immunogenicity of a vaccine or immunotherapeutic composition, by
CC      administering VC to an HLA-transgenic animal and evaluating
CC      immunogenicity based on a characteristic of the animal, or by in vitro
CC      primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC      useful for determining specific T cell frequency, by contacting T cells
CC      with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC      limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC      polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC      ABP74713 represent sequences used in the exemplification of the present
CC      invention
XX
XX      Sequence 9 AA;
SQ
XX
XX      Alignment Scores:
XX      Pred. No.:      816      Length:      9
XX      Score:          9.00      Matches:      9
XX      Percent Similarity: 100.00%      Conservative: 0
XX      Best Local Similarity: 100.00%      Mismatches: 0
XX      Query Match:      5.00%      Indels:      0
XX      DB:              1      Gaps:      0
US-10-023-182-1 (1-752) x ABP74471 (1-9)
OY      207  AGGCGCTCGGCGCGGAGAGAGCGCC 233
DB      1  ArgAlaSerGlyProGlyGlyGlyAla 9
RESULT 436
ABP74305
```

```
ID      ABP74305 standard; peptide; 9 AA.
XX
XX      ABP74305;
AC
XX      03-FEB-2003 (first entry)
DT
XX      Human NY-ESO-1 epitope SEQ ID NO:189.
DE
XX      Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW      T cell.
XX
XX      Homo sapiens.
OS
XX      WO200281646-A2.
PN
XX      17-OCT-2002.
PD
XX      04-APR-2002; 2002WO-US011101.
PF
XX      06-APR-2001; 2001US-0282211P.
PR      07-NOV-2001; 2001US-0337017P.
PR      07-MAR-2002; 2002US-0363210P.
XX
XX      (CTLI-) CTL IMMUNOTHERAPIES CORP.
PA
XX      Simard JTL, Diamond DC, Liu L, Xie Z;
PI      WPI; 2003-067518/06.
DR
XX      Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT      encoding the peptides, that are useful epitopes of target-associated
PT      antigens.
XX
XX      Claim 1; Page 18; 352pp; English.
PS
XX      The present invention describes an isolated epitope (I) and an epitope
CC      cluster. Also described is a vaccine or immunotherapeutic composition
CC      (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC      treating an animal, by administering to an animal the vaccine or
CC      immunotherapeutic composition. VC is also useful for evaluating
CC      immunogenicity of a vaccine or immunotherapeutic composition, by
CC      administering VC to an HLA-transgenic animal and evaluating
CC      immunogenicity based on a characteristic of the animal, or by in vitro
CC      primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC      useful for determining specific T cell frequency, by contacting T cells
CC      with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC      limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC      polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC      ABP74713 represent sequences used in the exemplification of the present
CC      invention
XX
XX      Sequence 9 AA;
SQ
XX
XX      Alignment Scores:
XX      Pred. No.:      816      Length:      9
XX      Score:          9.00      Matches:      9
XX      Percent Similarity: 100.00%      Conservative: 0
XX      Best Local Similarity: 100.00%      Mismatches: 0
XX      Query Match:      5.00%      Indels:      0
XX      DB:              1      Gaps:      0
US-10-023-182-1 (1-752) x ABP74305 (1-9)
OY      417  CTTCTGAAGAGTTCACTGTGTCCGCGC 443
DB      1  LeuLeuYsgIuphErntrValSerGly 9
RESULT 437
ABP74470
ID      ABP74470 standard; peptide; 9 AA.
XX
XX      ABP74470;
AC
XX
```

DT 03-FEB-2003 (first entry)  
XX Human NY-ESO-1 epitope SEQ ID NO:354.  
DE  
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
XX T cell.  
XX Homo sapiens.  
OS  
XX WO200281646-A2.  
PN  
XX 17-OCT-2002.  
PD  
XX 04-APR-2002; 2002WO-US011101.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-033017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
PI Simard JUl, Diamond DC, Liu L, Xie Z;  
XX MPI; 2003-067518/06.  
DR  
XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
PS Claim 1; Page 22; 352pp; English.  
XX  
XX The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to  
CC ABP74173 represent sequences used in the exemplification of the present  
CC invention  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74470 (1-9)  
QY 252 GGGCGGGCTTCAGGGCTGAATGGATGC 278  
DB 1 GYAlAAlAsErgLYeUsnslYcys 9  
RESULT 438  
ABU64827  
ID ABU64827 standard; peptide; 9 AA.  
XX  
AC ABU64827;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #11.  
XX

XX Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;  
XX serological identification of antigens by recombinant expression cloning;  
XX melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
XX lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
XX autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
XX human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
XX US2002164665-A1.  
PN  
XX 07-NOV-2002.  
PD  
XX 17-DEC-2001; 2001US-00023182.  
PF  
XX 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
XX (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
XX MPI; 2003-298695/29.  
DR  
XX  
XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
PT autoimmune disorders.  
XX  
PS Example 13; Page 6; 18pp; English.  
XX  
XX The invention relates to an isolated antibody or binding fragment of an  
CC antibody, which binds with a protein that is encoded by an isolated  
CC nucleic acid molecule the complementary sequence of which hybridises  
CC under stringent conditions to a nucleic acid molecule comprising the  
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
CC ABX96656. Also included are a hybridoma cell line producing the novel  
CC monoclonal antibody, screening for cancer in a sample (by contacting the  
CC sample with the isolated antibody, and determining binding of the novel  
CC antibody to a target as an indicator of cancer), determining antibodies  
CC against a cancer-associated antigen in a sample, determining  
CC regression/progression/onset of a cancerous condition (by monitoring a  
CC sample from a patient with the cancerous condition from parameters such  
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0





CC nucleic acid molecule the complementary sequence of which hybridises  
CC under stringent conditions to a nucleic acid molecule comprising the  
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
CC ABX96656. Also included are a hybridoma cell line producing the novel  
CC monoclonal antibody, screening for cancer in a sample (by contacting the  
CC sample with the isolated antibody, and determining binding of the novel  
CC antibody to a target as an indicator of cancer), determining antibodies  
CC against a cancer-associated antigen in a sample, determining  
CC regression/progression/onset of a cancerous condition (by monitoring a  
CC sample from a patient with the cancerous condition from parameters such  
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
CC  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64831 (1-9)  
QY 303 GAGAGCCGCTGCTTGTAGTTCTACCTC 329  
DB 1 GluSerArgLeuGluGluPheTyrLeu 9  
RESULT 441  
ABU64832  
ID ABU64832 standard; peptide; 9 AA.  
XX  
XX ABU64832;  
XX  
XX 14-MAY-2003 (first entry)  
XX  
XX Human NY-ESO-1 HLA binding motif #16.  
DE Human NY-ESO-1 HLA binding motif #16.  
XX  
XX Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
XX US2002164665-A1.  
XX  
XX 07-NOV-2002.  
XX  
XX 17-DEC-2001; 2001US-00023182.  
XX  
XX 03-OCT-1996; 96US-00725182.  
XX 15-SEP-1997; 97US-00937263.  
XX 29-DEC-2000; 2000US-00751798.  
XX  
XX (STOC/) STOCKERT E.  
XX (JAGE/) JAGER E.  
XX (CHEN/) CHEN Y.  
XX

PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
XX WPI; 2003-298695/29.  
DR  
XX  
XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
PT autoimmune disorders.  
XX  
XX  
XX Example 13; Page 6; 18pp; English.  
XX  
XX The invention relates to an isolated antibody or binding fragment of an  
CC antibody, which binds with a protein that is encoded by an isolated  
CC nucleic acid molecule the complementary sequence of which hybridises  
CC under stringent conditions to a nucleic acid molecule comprising the  
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
CC ABX96656. Also included are a hybridoma cell line producing the novel  
CC monoclonal antibody, screening for cancer in a sample (by contacting the  
CC sample with the isolated antibody, and determining binding of the novel  
CC antibody to a target as an indicator of cancer), determining antibodies  
CC against a cancer-associated antigen in a sample, determining  
CC regression/progression/onset of a cancerous condition (by monitoring a  
CC sample from a patient with the cancerous condition from parameters such  
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
CC  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64832 (1-9)  
QY 288 GGGGCGAGGGGGCGGAGAGCGCTG 314  
DB 1 GlyAlaArgGlyProGluSerArgLeu 9  
RESULT 442  
ABU64838  
ID ABU64838 standard; peptide; 9 AA.  
XX  
XX ABU64838;  
XX  
XX 14-MAY-2003 (first entry)  
XX  
XX Human NY-ESO-1 HLA binding motif #22.  
DE Human NY-ESO-1 HLA binding motif #22.  
XX  
XX Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW

```
KM human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
PD 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
SQ Sequence 9 AA;
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ABU64838 (1-9)
OY 381 GCCCAGATGCCCAACCGCTTCCGTG 407
|||||
```

```
DB 1 AlaglnAspAlaProLeuProVal 9
RESULT 443
ABU64817 :
ID ABU64817 standard; peptide; 9 AA.
XX
AC ABU64817;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #1.
XX
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KW serological identification of antigens by recombinant expression cloning;
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KW human leukocyte antigen; HLA binding motif.
XX
OS Homo sapiens.
XX
PN US2002164665-A1.
XX
DR 07-NOV-2002.
XX
PF 17-DEC-2001; 2001US-00023182.
XX
PR 03-OCT-1996; 96US-00725182.
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
PA (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
PA (OLDL/) OLD L J.
XX
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
DR WPI; 2003-298695/29.
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
PS Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridises
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
```

CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64834 (1-9)  
Qy 297 GGGCCGAGAGCCGCTGCTTACGTTTC 323  
Db 1 GlyProGlnSerArgLeuLeuGluPhe 9  
RESULT 444  
ABU64834  
ID ABU64834 standard; peptide; 9 AA.  
XX  
AC ABU64834;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #18.  
XX  
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytosratic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
XX  
DR WPI, 2003-298695/29.  
XX  
PF New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
PT autoimmune disorders.  
XX  
PS Example 13; Page 6; 18pp; English.  
XX  
CC The invention relates to an isolated antibody or binding fragment of an  
CC antibody, which binds with a protein that is encoded by an isolated  
CC nucleic acid molecule the complementary sequence of which hybridises  
CC under stringent conditions to a nucleic acid molecule comprising the  
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
CC ABX6656. Also included are a hybridoma cell line producing the novel  
CC monoclonal antibody, screening for cancer in a sample (by contacting the

CC sample with the isolated antibody, and determining binding of the novel  
CC antibody to a target as an indicator of cancer), determining antibodies  
CC against a cancer-associated antigen in a sample, determining  
CC regression/progression/onset of a cancerous condition (by monitoring a  
CC sample from a patient with the cancerous condition from parameters such  
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64834 (1-9)  
Qy 300 CCGAGAGAGCCGCTGCTTACGTTTAC 326  
Db 1 ProGlnSerArgLeuLeuGluPheTyr 9  
RESULT 445  
ABU64830  
ID ABU64830 standard; peptide; 9 AA.  
XX  
AC ABU64830;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #14.  
XX  
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytosratic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;

XX  
DR WPI; 2003-298695/29.  
XX  
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
PT autoimmune disorders.  
XX  
PS Example 13; Page 6; 18pp; English.  
XX  
CC The invention relates to an isolated antibody or binding fragment of an  
CC antibody, which binds with a protein that is encoded by an isolated  
CC nucleic acid molecule the complementary sequence of which hybridises  
CC under stringent conditions to a nucleic acid molecule comprising the  
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
CC ABX96556. Also included are a hybridoma cell line producing the novel  
CC monoclonal antibody, screening for cancer in a sample (by contacting the  
CC sample with the isolated antibody, and determining binding of the novel  
CC antibody to a target as an indicator of cancer), determining antibodies  
CC against a cancer-associated antigen in a sample, determining  
CC regression/progression/onset of a cancerous condition (by monitoring a  
CC sample from a patient with the cancerous condition from parameters such  
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX  
SQ Sequence 9 AA:  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64830 (1-9)  
OY 405 GTGCGAGGGGTCCTTGAGAGGATTC 431  
DB 1 ValProGlyValLeuLeuLysGluPhe 9  
RESULT 446  
ABU64829  
ID ABU64829 standard; peptide; 9 AA.  
XX  
AC ABU64829;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #13.  
XX  
KW Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.

XX  
PD 07-NOV-2002.  
XX  
PS 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
XX  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (SNOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
XX  
DR WPI; 2003-298695/29.  
XX  
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
PT autoimmune disorders.  
XX  
PS Example 13; Page 6; 18pp; English.  
XX  
CC The invention relates to an isolated antibody or binding fragment of an  
CC antibody, which binds with a protein that is encoded by an isolated  
CC nucleic acid molecule the complementary sequence of which hybridises  
CC under stringent conditions to a nucleic acid molecule comprising the  
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
CC ABX96556. Also included are a hybridoma cell line producing the novel  
CC monoclonal antibody, screening for cancer in a sample (by contacting the  
CC sample with the isolated antibody, and determining binding of the novel  
CC antibody to a target as an indicator of cancer), determining antibodies  
CC against a cancer-associated antigen in a sample, determining  
CC regression/progression/onset of a cancerous condition (by monitoring a  
CC sample from a patient with the cancerous condition from parameters such  
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX  
SQ Sequence 9 AA:  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64829 (1-9)  
OY 303 GAGAGCCGCGCTTGAGTCTACCTC 329  
DB 1 GluSerArgLeuLeuGluPheTyrLeu 9  
RESULT 447  
ABU64840  
ID ABU64840 standard; peptide; 9 AA.

XX ABU64840;  
 AC  
 XX 14-MAY-2003 (first entry)  
 DT  
 XX  
 DE Human NY-ESO-1 HLA binding motif #24.  
 XX  
 KW Human; antigen; NY-ESO-1; cancer; SEREX; cytosstatic; immunosuppressive;  
 KW serological identification of antigens by recombinant expression cloning;  
 KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
 KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
 KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
 KW human leukocyte antigen; HLA binding motif.  
 XX  
 OS Homo sapiens.  
 XX  
 PN US2002164665-A1.  
 PD  
 XX 07-NOV-2002.  
 PF  
 XX 17-DEC-2001; 2001US-00023182.  
 XX  
 PR 03-OCT-1996; 96US-00725182.  
 PR 15-SEP-1997; 97US-00937263.  
 PR 29-DEC-2000; 2000US-00751798.  
 XX  
 PA (STOC/) STOCKERT E.  
 PA (JAGE/) JAGER E.  
 PA (CHEN/) CHEN Y.  
 PA (SCAN/) SCANLAN M.  
 PA (ALEX/) ALEXANDER K.  
 PA (OLDL/) OLD L J.  
 XX  
 PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
 DR WPI: 2003-298695/29.  
 XX  
 PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
 PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
 PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
 PT autoimmune disorders.  
 XX  
 PS Example 13; Page 6; 18pp; English.  
 XX  
 CC The invention relates to an isolated antibody or binding fragment of an  
 CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridises  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC lymphoma is useful for treating cancer, e.g. melanoma, hepatoma,  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC infections or autoimmune disorders. The present sequence represents an  
 CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
 XX  
 XX Sequence 9 AA;

Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0  
 US-10-023-182-1 (1-752) x ABU64840 (1-9)  
 QY 537 ATCAAGAGTCTTCTCCCGTGT 563  
 Db 1 IIEthrgInCysPheLeuProValPhe 9  
 RESULT 448  
 ABU64835  
 ID ABU64835 standard; peptide; 9 AA.  
 XX  
 AC ABU64835;  
 XX  
 DT 14-MAY-2003 (first entry)  
 DT  
 XX  
 DE Human NY-ESO-1 HLA binding motif #19.  
 XX  
 KW Human; antigen; NY-ESO-1; cancer; SEREX; cytosstatic; immunosuppressive;  
 KW serological identification of antigens by recombinant expression cloning;  
 KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
 KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
 KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
 KW human leukocyte antigen; HLA binding motif.  
 XX  
 OS Homo sapiens.  
 XX  
 PN US2002164665-A1.  
 PD  
 XX 07-NOV-2002.  
 PF  
 XX 17-DEC-2001; 2001US-00023182.  
 XX  
 PR 03-OCT-1996; 96US-00725182.  
 PR 15-SEP-1997; 97US-00937263.  
 PR 29-DEC-2000; 2000US-00751798.  
 XX  
 PA (STOC/) STOCKERT E.  
 PA (JAGE/) JAGER E.  
 PA (CHEN/) CHEN Y.  
 PA (SCAN/) SCANLAN M.  
 PA (ALEX/) ALEXANDER K.  
 PA (OLDL/) OLD L J.  
 XX  
 PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
 DR WPI: 2003-298695/29.  
 XX  
 PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
 PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
 PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
 PT autoimmune disorders.  
 XX  
 PS Example 13; Page 6; 18pp; English.  
 XX  
 CC The invention relates to an isolated antibody or binding fragment of an  
 CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridises  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such

CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SERX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX

SO Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABU64835 (1-9)

QY 357 GCAGAGCTGGCCCGCAGAGCTGGCC 383  
DB 1 AlAGlueuAlaArgSerleuAla 9

RESULT 449  
ABU64813  
ID ABU64813 standard; peptide: 9 AA.  
XX  
AC ABU64813;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 CTL stimulatory peptide #2.  
XX  
KW Human; antigen; NY-ESO-1; cancer; SREX; cytosolic; immunosuppressive;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
XX WPI; 2003-298695/29.  
XX  
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or

PT autoimmune disorders.  
XX  
XX Example 12; Page 6; 18pp; English.  
XX  
XX The invention relates to an isolated antibody or binding fragment of an  
XX antibody, which binds with a protein that is encoded by an isolated  
XX nucleic acid molecule the complementary sequence of which hybridizes  
XX under stringent conditions to a nucleic acid molecule comprising the  
XX nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
XX monoclonal antibody, screening for cancer in a sample (by contacting the  
XX sample with the isolated antibody, and determining binding of the novel  
XX antibody to a target as an indicator of cancer), determining antibodies  
XX against a cancer-associated antigen in a sample, determining  
XX regression/progression/onset of a cancerous condition (by monitoring a  
XX sample from a patient with the cancerous condition from parameters such  
XX as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
XX antibody that binds to it, where the amount of the parameter is  
XX indicative of progression, regression or onset of cancerous conditions),  
XX and treating a subject afflicted with a cancerous condition by  
XX administering to the subject an antibody that specifically binds to NY-  
XX ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
XX as stimulating a CTL (cytolytic T cell line) identified by SERX  
XX (serological identification of antigens by recombinant expression  
XX cloning) expressed on a cancerous cell associated with the cancerous  
XX condition) where the antibody is coupled to an anticancer agent. The  
XX antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
XX lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
XX infections or autoimmune disorders. The present sequence represents a CTL  
XX stimulatory peptide derived from human NY-ESO-1  
XX

SO Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABU64813 (1-9)

QY 522 TCCTGTGATGGAGTCAGCAGTGC 548  
DB 1 SerleuNeuMetTrpIleInGInGys 9

RESULT 450  
ABU64818  
ID ABU64818 standard; peptide: 9 AA.  
XX  
AC ABU64818;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #2.  
XX  
KW Human; antigen; NY-ESO-1; cancer; SREX; cytosolic; immunosuppressive;  
KW serological identification of antigens by recombinant expression cloning;  
KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KW human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
XX

```
PR 15-SEP-1997; 97US-00937263.
PR 29-DEC-2000; 2000US-00751798.
XX
XX (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
XX (OLDL/) OLD L J.
XX
XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX WPI; 2003-298695/29.
XX
XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful
XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
XX prostate, lung, ovarian, thyroid or bladder cancer, infections or
XX autoimmune disorders.
XX
XX Example 13; Page 6; 18pp; English.
XX
XX The invention relates to an isolated antibody or binding fragment of an
XX antibody, which binds with a protein that is encoded by an isolated
XX nucleic acid molecule the complementary sequence of which hybridizes
XX under stringent conditions to a nucleic acid molecule comprising the
XX nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
XX ABX96656. Also included are a hybridoma cell line producing the novel
XX monoclonal antibody, screening for cancer in a sample (by contacting the
XX sample with the isolated antibody, and determining binding of the novel
XX antibody to a target as an indicator of cancer), determining antibodies
XX against a cancer-associated antigen in a sample, determining
XX regression/progression/onset of a cancerous condition (by monitoring a
XX sample from a patient with the cancerous condition from parameters such
XX as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
XX antibody that binds to it, where the amount of the parameter is
XX indicative of progression, regression or onset of cancerous conditions),
XX and treating a subject afflicted with a cancerous condition by
XX administering to the subject an antibody that specifically binds to NY-
XX ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
XX as stimulating a CTL (cytolytic T cell line) identified by SREX
XX (serological identification of antigens by recombinant expression
XX cloning) expressed on a cancerous cell associated with the cancerous
XX condition) where the antibody is coupled to an anticancer agent. The
XX antibody is useful for treating cancer, e.g. melanoma, hepatoma,
XX lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
XX infections or autoimmune disorders. The present sequence represents an
XX HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
XX Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABU64818 (1-9)
XX
XX QY 525 CTGTTGATGTGATACGACGAGTCCTT 551
XX |||||||
XX Db 1 LeuLeuMeLTPILeThrGlnCysPhe 9
XX
XX RESULT 451
XX ABU64828
XX ID ABU64828 standard; peptide; 9 AA.
XX AC ABU64828;
XX XX
XX DT 14-MAY-2003 (first entry)
XX XX
XX DE Human NY-ESO-1 HLA binding motif #12.
```

```
XX
XX Human; antigen; NY-ESO-1; cancer; SREX; cytostatic; immunosuppressive;
XX serological identification of antigens by recombinant expression cloning;
XX melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
XX lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
XX autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
XX human leukocyte antigen; HLA binding motif.
XX
XX Homo sapiens.
XX
XX US2002164665-A1.
XX
XX PD 07-NOV-2002.
XX
XX 17-DEC-2001; 2001US-00023182.
XX
XX PF 03-OCT-1996; 96US-00725182.
XX PR 15-SEP-1997; 97US-00937263.
XX PR 29-DEC-2000; 2000US-00751798.
XX
XX (STOC/) STOCKERT E.
PA (JAGE/) JAGER E.
PA (CHEN/) CHEN Y.
PA (SCAN/) SCANLAN M.
PA (ALEX/) ALEXANDER K.
XX (OLDL/) OLD L J.
XX
XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX WPI; 2003-298695/29.
XX
XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful
XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
XX prostate, lung, ovarian, thyroid or bladder cancer, infections or
XX autoimmune disorders.
XX
XX Example 13; Page 6; 18pp; English.
XX
XX The invention relates to an isolated antibody or binding fragment of an
XX antibody, which binds with a protein that is encoded by an isolated
XX nucleic acid molecule the complementary sequence of which hybridizes
XX under stringent conditions to a nucleic acid molecule comprising the
XX nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
XX ABX96656. Also included are a hybridoma cell line producing the novel
XX monoclonal antibody, screening for cancer in a sample (by contacting the
XX sample with the isolated antibody, and determining binding of the novel
XX antibody to a target as an indicator of cancer), determining antibodies
XX against a cancer-associated antigen in a sample, determining
XX regression/progression/onset of a cancerous condition (by monitoring a
XX sample from a patient with the cancerous condition from parameters such
XX as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
XX antibody that binds to it, where the amount of the parameter is
XX indicative of progression, regression or onset of cancerous conditions),
XX and treating a subject afflicted with a cancerous condition by
XX administering to the subject an antibody that specifically binds to NY-
XX ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
XX as stimulating a CTL (cytolytic T cell line) identified by SREX
XX (serological identification of antigens by recombinant expression
XX cloning) expressed on a cancerous cell associated with the cancerous
XX condition) where the antibody is coupled to an anticancer agent. The
XX antibody is useful for treating cancer, e.g. melanoma, hepatoma,
XX lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
XX infections or autoimmune disorders. The present sequence represents an
XX HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
XX Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
```



```
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ABU64828 (1-9)
Qy 288 GGGGCCAGGGGCGCGAGAGCCGCTG 314
Db 1 GlyAlaArgGlyProGluSerArgLeu 9

RESULT 452
ABU64822
ID ABU64822 standard; peptide; 9 AA.
XX
XX AC ABU64822;
XX DT 14-MAY-2003 (first entry)
XX DE Human NY-ESO-1 HLA binding motif #6.
XX
XX Human; antigen: NY-ESO-1; cancer; SREX; cytosolic; immunosuppressive;
XX serological identification of antigens by recombinant expression cloning;
XX melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;
XX lung cancer; ovarian cancer; thyroid cancer; bladder cancer;
XX autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
XX human leukocyte antigen; HLA binding motif.
XX
XX Homo sapiens.
XX OS
XX FN US2002164665-A1.
XX PD 07-NOV-2002.
XX PF 17-DEC-2001; 2001US-00023182.
XX PR 03-OCT-1996; 96US-00725182.
XX PR 15-SEP-1997; 97US-00937263.
XX PR 29-DEC-2000; 2000US-00751798.
XX
XX PA (STOC/) STOCKERT E.
XX PA (JAGE/) JAGER E.
XX PA (CHEN/) CHEN Y.
XX PA (SCAN/) SCANLAN M.
XX PA (ALEX/) ALEXANDER K.
XX PA (OLDL/) OLD L J.
XX
XX PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX DR WPI; 2003-298695/29.
XX
XX PF New antibody that binds to the cancer associated antigen NY-ESO-1, useful
XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
XX prostate, lung, ovarian, thyroid or bladder cancer, infections or
XX autoimmune disorders.
XX
XX Example 13; Page 6; 18pp; English.
XX
XX The invention relates to an isolated antibody or binding fragment of an
XX antibody, which binds with a protein that is encoded by an isolated
XX nucleic acid molecule the complementary sequence of which hybridises
XX under stringent conditions to a nucleic acid molecule comprising the
XX nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
XX ABX96656. Also included are a hybridoma cell line producing the novel
XX monoclonal antibody, screening for cancer in a sample (by contacting the
XX sample with the isolated antibody, and determining binding of the novel
XX antibody to a target as an indicator of cancer), determining antibodies
XX against a cancer-associated antigen in a sample, determining
XX regression/progression/onset of a cancerous condition (by monitoring a
XX sample from a patient with the cancerous condition from parameters such
XX as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
XX antibody that binds to it, where the amount of the parameter is
XX indicative of progression, regression or onset of cancerous conditions),
XX and treating a subject afflicted with a cancerous condition by
XX administering to the subject an antibody that specifically binds to NY-
XX ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
```

```
CC as stimulating a CTL (cytolytic T cell line) identified by SREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
XX Sequence 9 AA;
SQ
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ABU64822 (1-9)
Qy 288 GGGGCCAGGGGCGCGAGAGCCGCTG 314
Db 1 GlyAlaArgGlyProGluSerArgLeu 9

RESULT 453
ABU64825
ID ABU64825 standard; peptide; 9 AA.
XX
XX AC ABU64825;
XX DT 14-MAY-2003 (first entry)
XX DE Human NY-ESO-1 HLA binding motif #9.
XX
XX Human; antigen: NY-ESO-1; cancer; SREX; cytosolic; immunosuppressive;
XX serological identification of antigens by recombinant expression cloning;
XX melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;
XX lung cancer; ovarian cancer; thyroid cancer; bladder cancer;
XX autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
XX human leukocyte antigen; HLA binding motif.
XX
XX Homo sapiens.
XX OS
XX FN US2002164665-A1.
XX PD 07-NOV-2002.
XX PF 17-DEC-2001; 2001US-00023182.
XX PR 03-OCT-1996; 96US-00725182.
XX PR 15-SEP-1997; 97US-00937263.
XX PR 29-DEC-2000; 2000US-00751798.
XX
XX PA (STOC/) STOCKERT E.
XX PA (JAGE/) JAGER E.
XX PA (CHEN/) CHEN Y.
XX PA (SCAN/) SCANLAN M.
XX PA (ALEX/) ALEXANDER K.
XX PA (OLDL/) OLD L J.
XX
XX PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX DR WPI; 2003-298695/29.
XX
XX PF New antibody that binds to the cancer associated antigen NY-ESO-1, useful
XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
XX prostate, lung, ovarian, thyroid or bladder cancer, infections or
XX autoimmune disorders.
XX
XX Example 13; Page 6; 18pp; English.
XX
XX The invention relates to an isolated antibody or binding fragment of an
```

CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridizes  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC infections or autoimmune disorders. The present sequence represents an  
 CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
 XX

## SQ Sequence 9 AA:

Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABU64836 (1-9)

QY 390 GCCCCACCGCTTCCGTCGCGAGGGGTG 416

DB 1 AAlaProPoleuProValProGlyVal 9

RESUT 454

ABU64836

ID ABU64836 standard; peptide; 9 AA.

AC ABU64836;

XX 14-MAY-2003 (first entry)

DT Human NY-ESO-1 HLA binding motif #20.

DE Human; antigen: NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;

KW serological identification of antigens by recombinant expression cloning;

KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;

KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;

KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line;

KW human leukocyte antigen; HLA binding motif.

XX Homo sapiens.

XX US2002164665-A1.

XX 07-NOV-2002.

XX 17-DEC-2001; 2001US-00023182.

XX 03-OCT-1996; 96US-00725182.

XX 15-SEP-1997; 97US-00937263.

XX 29-DEC-2000; 2000US-00751798.

XX (STOC/) STOCKERT E.

XX (JAGE/) JAGER E.

PA (CHEN/) CHEN Y.  
 PA (SCAN/) SCANLAN M.  
 PA (ALEX/) ALEXANDER K.  
 PA (OLDL/) OLD L J.  
 PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
 DR WPI; 2003-298695/29.  
 XX  
 XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
 PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
 PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
 PT autoimmune disorders.  
 XX  
 XX Example 13; Page 6; 18pp; English.

The invention relates to an isolated antibody or binding fragment of an  
 antibody, which binds with a protein that is encoded by an isolated  
 nucleic acid molecule the complementary sequence of which hybridizes  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC infections or autoimmune disorders. The present sequence represents an  
 CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
 XX

## SQ Sequence 9 AA:

Alignment Scores:  
 Pred. No.: 816 Length: 9  
 Score: 9.00 Matches: 9  
 Percent Similarity: 100.00% Conservative: 0  
 Best Local Similarity: 100.00% Mismatches: 0  
 Query Match: 5.00% Indels: 0  
 DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ABU64836 (1-9)

QY 351 ATGGAAGCAGAGCTGGCCCGCAGAGAC 377

DB 1 MetGuaIaGluLeuAlaIaArgSer 9

RESUT 455

ABU64839

ID ABU64839 standard; peptide; 9 AA.

AC ABU64839;

XX 14-MAY-2003 (first entry)

DE Human NY-ESO-1 HLA binding motif #23.

KW Human; antigen: NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;

KW serological identification of antigens by recombinant expression cloning;

KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer; infection;

KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;

KW autoimmune disorder; cancer marker; CTL; cyclolytic T cell line;  
 KM human leukocyte antigen; HLA binding motif.  
 XX Homo sapiens.  
 OS  
 XX US200216465-A1.  
 PN  
 XX 07-NOV-2002.  
 PD  
 XX 17-DEC-2001; 2001US-00023182.  
 PF  
 XX 03-OCT-1996; 96US-00725182.  
 PR 15-SEP-1997; 97US-00937263.  
 PR 29-DEC-2000; 2000US-00751798.  
 XX  
 PA (STOC/) STOCKERT E.  
 PA (JAGE/) JAGER E.  
 PA (CHEN/) CHEN Y.  
 PA (SCAN/) SCANLAN M.  
 PA (ALEX/) ALEXANDER K.  
 PA (OLDL/) OLD L. J.  
 PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
 XX WPI; 2003-238695/29.  
 DR  
 XX  
 PT New antibody that binds to the cancer associated antigen NY-ESO-1,  
 PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
 PT prostate, lung, ovarian, thyroid or bladder cancer, infections or  
 PT autoimmune disorders.  
 XX  
 PS  
 XX Example 13; Page 6; 18pp; English.  
 CC The invention relates to an isolated antibody or binding fragment of an  
 CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridises  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cyclolytic T cell line) identified by SEREX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC infections or autoimmune disorders. The present sequence represents an  
 CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1-  
 CC  
 XX Sequence 9 AA;  
 SQ

| Alignment Scores:      |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             |         | Length:       |   |
| Score:                 | 816     | Matches:      | 9 |
| Percent Similarity:    | 9.00    | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x ABU64839 (1-9)

486 CTGCAGCTTCATCAGCTCCGTGCTTC 512

Do 1 LeuGlnMetSerIleSerSerCysIleu 9  
 RESULT 456  
 ABU64814  
 ID ABU64814 standard; peptide; 9 AA.  
 XX  
 AC ABU64814;  
 XX  
 DT 14-MAY-2003 (first entry)  
 XX  
 DE Human NY-ESO-1 CTL stimulatory peptide #3.  
 XX  
 KW Human; antiGen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;  
 KW serological identification of antigens by recombinant expression cloning;  
 KW melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
 KW lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
 KW autoimmune disorder; cancer marker; CTL; cytolytic T cell line.  
 XX  
 OS Homo sapiens.  
 XX  
 PN US2002164665-A1.  
 XX  
 PD 07-NOV-2002.  
 XX  
 PF 17-DEC-2001; 2001US-00023182.  
 XX  
 PR 03-OCT-1996; 96US-00725182.  
 PR 15-SEP-1997; 97US-00937263.  
 PR 29-DEC-2000; 2000US-00751798.  
 XX  
 PA (STOC/) STOCKERT E.  
 PA (JAGE/) JAGER E.  
 PA (CHEN/) CHEN Y.  
 PA (SCAN/) SCANLAN M.  
 PA (ALEX/) ALEXANDER K.  
 PA (OLDL/) OLD L J.  
 XX  
 PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
 XX  
 DR WPI; 2003-298695/29.  
 XX  
 PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
 XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
 XX prostate, lung, ovarian, thyroid or bladder cancer, infections or  
 XX autoimmune disorders.  
 XX  
 PS Example 12; Page 6; 18pp; English.  
 XX  
 CC The invention relates to an isolated antibody or binding fragment of an  
 CC antibody, which binds with a protein that is encoded by an isolated  
 CC nucleic acid molecule the complementary sequence of which hybridises  
 CC under stringent conditions to a nucleic acid molecule comprising the  
 CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
 CC ABX96656. Also included are a hybridoma cell line producing the novel  
 CC monoclonal antibody, screening for cancer in a sample (by contacting the  
 CC sample with the isolated antibody, and determining binding of the novel  
 CC antibody to a target as an indicator of cancer), determining antibodies  
 CC against a cancer-associated antigen in a sample, determining  
 CC regression/progression/onset of a cancerous condition (by monitoring a  
 CC sample from a patient with the cancerous condition from parameters such  
 CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
 CC antibody that binds to it, where the amount of the parameter is  
 CC indicative of progression, regression or onset of cancerous conditions),  
 CC and treating a subject afflicted with a cancerous condition by  
 CC administering to the subject an antibody that specifically binds to NY-  
 CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
 CC as stimulating a CTL (cytolytic T cell line) identified by SEREX  
 CC (serological identification of antigens by recombinant expression  
 CC cloning) expressed on a cancerous cell associated with the cancerous  
 CC condition) where the antibody is coupled to an anticancer agent. The  
 CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
 CC

CC infections or autoimmune disorders. The present sequence represents a CTL  
CC stimulatory peptide derived from human NY-ESO-1  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64814 (1-9)  
OY 516 CAGCTTCCGTCGTGATGTCAGC 542  
DB 1 GlnLeuSerLeuMetMetTrpIleThr 9  
RESULT 457  
ABU64823  
ID ABU64823 standard; peptide; 9 AA.  
XX  
AC ABU64823;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #7.  
XX  
KM Human; antigen; NY-ESO-1; cancer; SREX; cytosolic; immunosuppressive;  
KM serological identification of antigens by recombinant expression cloning;  
KM melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KM lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KM autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KM human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;  
XX  
DR WPI; 2003-298695/29.  
XX  
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful  
XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,  
XX prostate, lung, ovarian, thyroid or bladder cancer, infections or  
XX autoimmune disorders.  
XX  
PS Example 13; Page 6; 18pp; English.  
XX  
CC The invention relates to an isolated antibody or binding fragment of an  
CC antibody, which binds with a protein that is encoded by an isolated  
CC nucleic acid molecule the complementary sequence of which hybridises  
CC under stringent conditions to a nucleic acid molecule comprising the  
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as  
CC ABX96656. Also included are a hybridoma cell line producing the novel  
CC monoclonal antibody, screening for cancer in a sample (by contacting the

CC sample with the isolated antibody, and determining binding of the novel  
CC antibody to a target as an indicator of cancer), determining antibodies  
CC against a cancer-associated antigen in a sample, determining  
CC regression/progression/onset of a cancerous condition (by monitoring a  
CC sample from a patient with the cancerous condition from parameters such  
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the  
CC antibody that binds to it, where the amount of the parameter is  
CC indicative of progression, regression or onset of cancerous conditions),  
CC and treating a subject afflicted with a cancerous condition by  
CC administering to the subject an antibody that specifically binds to NY-  
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified  
CC as stimulating a CTL (cytolytic T cell line) identified by SREX  
CC (serological identification of antigens by recombinant expression  
CC cloning) expressed on a cancerous cell associated with the cancerous  
CC condition) where the antibody is coupled to an anticancer agent. The  
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,  
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,  
CC infections or autoimmune disorders. The present sequence represents an  
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABU64823 (1-9)  
OY 231 GCCCGCGGCGTCGTCAGTCGCGCG 257  
DB 1 AlaProArgGlyProHisGlyGlyAla 9  
RESULT 458  
ABU64819  
ID ABU64819 standard; peptide; 9 AA.  
XX  
AC ABU64819;  
XX  
DT 14-MAY-2003 (first entry)  
XX  
DE Human NY-ESO-1 HLA binding motif #3.  
XX  
KM Human; antigen; NY-ESO-1; cancer; SREX; cytosolic; immunosuppressive;  
KM serological identification of antigens by recombinant expression cloning;  
KM melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;  
KM lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;  
KM autoimmune disorder; cancer marker; CTL; cytolytic T cell line;  
KM human leukocyte antigen; HLA binding motif.  
XX  
OS Homo sapiens.  
XX  
PN US2002164665-A1.  
XX  
PD 07-NOV-2002.  
XX  
PF 17-DEC-2001; 2001US-00023182.  
XX  
PR 03-OCT-1996; 96US-00725182.  
PR 15-SEP-1997; 97US-00937263.  
PR 29-DEC-2000; 2000US-00751798.  
XX  
PA (STOC/) STOCKERT E.  
PA (JAGE/) JAGER E.  
PA (CHEN/) CHEN Y.  
PA (SCAN/) SCANLAN M.  
PA (ALEX/) ALEXANDER K.  
PA (OLDL/) OLD L J.  
XX  
PI Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;

```

XX WPI; 2003-298695/29.
DR
XX
PT New antibody that binds to the cancer associated antigen NY-ESO-1, useful
PT for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
PT prostate, lung, ovarian, thyroid or bladder cancer, infections or
PT autoimmune disorders.
XX
XX Example 13; Page 6; 18pp; English.
XX
CC The invention relates to an isolated antibody or binding fragment of an
CC antibody, which binds with a protein that is encoded by an isolated
CC nucleic acid molecule the complementary sequence of which hybridizes
CC under stringent conditions to a nucleic acid molecule comprising the
CC nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
CC ABX96656. Also included are a hybridoma cell line producing the novel
CC monoclonal antibody, screening for cancer in a sample (by contacting the
CC sample with the isolated antibody, and determining binding of the novel
CC antibody to a target as an indicator of cancer), determining antibodies
CC against a cancer-associated antigen in a sample, determining
CC regression/progression/onset of a cancerous condition (by monitoring a
CC sample from a patient with the cancerous condition from parameters such
CC as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
CC antibody that binds to it, where the amount of the parameter is
CC indicative of progression, regression or onset of cancerous conditions),
CC and treating a subject afflicted with a cancerous condition by
CC administering to the subject an antibody that specifically binds to NY-
CC ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
CC as stimulating a CTL (cytolytic T cell line) identified by SEREX
CC (serological identification of antigens by recombinant expression
CC cloning) expressed on a cancerous cell associated with the cancerous
CC condition) where the antibody is coupled to an anticancer agent. The
CC antibody is useful for treating cancer, e.g. melanoma, hepatoma,
CC lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
CC infections or autoimmune disorders. The present sequence represents an
CC HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
CC
XX
SQ Sequence 9 AA;
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
XX
US-10-023-182-1 (1-752) x ABU64819 (1-9)
OY 528 TTGATGTCGATCAGCAGTCTTCTG 554
DB 1 LeuMetTrpIleTrnGlnCysPheIleu 9
XX
RESULT 459
ABU64826
ID ABU64826 standard; peptide; 9 AA.
XX
XX ABU64826;
XX
DT 14-MAY-2003 (first entry)
XX
DE Human NY-ESO-1 HLA binding motif #10.
XX
KM Human; antigen; NY-ESO-1; cancer; SEREX; cytostatic; immunosuppressive;
KM serological identification of antigens by recombinant expression cloning;
KM melanoma; hepatoma; lymphoma; breast cancer; prostate cancer;
KM lung cancer; ovarian cancer; thyroid cancer; bladder cancer; infection;
KM autoimmune disorder; cancer marker; CTL; cytolytic T cell line;
KM human leukocyte antigen; HLA binding motif.
XX
XX Homo sapiens.
XX
XX US2002164665-A1.
XX

```

```

XX
XX 07-NOV-2002.
XX
XX 17-DEC-2001; 2001US-00023182.
XX
XX 03-OCT-1996; 96US-00725182.
XX
XX 15-SEP-1997; 97US-00937263.
XX
XX 29-DEC-2000; 2000US-00751798.
XX
XX (STOC/) STOCKERT E.
XX (JAGER/) JAGER E.
XX (CHEN/) CHEN Y.
XX (SCAN/) SCANLAN M.
XX (ALEX/) ALEXANDER K.
XX (OLDL/) OLD L J.
XX
XX Stockert E, Jager E, Chen Y, Scanlan M, Alexander K, Old LJ;
XX
XX WPI; 2003-298695/29.
XX
XX New antibody that binds to the cancer associated antigen NY-ESO-1, useful
XX for treating cancer, e.g. melanoma, hepatoma, lymphoma, or breast,
XX prostate, lung, ovarian, thyroid or bladder cancer, infections or
XX autoimmune disorders.
XX
XX Example 13; Page 6; 18pp; English.
XX
XX The invention relates to an isolated antibody or binding fragment of an
XX antibody, which binds with a protein that is encoded by an isolated
XX nucleic acid molecule the complementary sequence of which hybridizes
XX under stringent conditions to a nucleic acid molecule comprising the
XX nucleotides 54-593 of the human cancer marker NY-ESO-1 cDNA appearing as
XX ABX96656. Also included are a hybridoma cell line producing the novel
XX monoclonal antibody, screening for cancer in a sample (by contacting the
XX sample with the isolated antibody, and determining binding of the novel
XX antibody to a target as an indicator of cancer), determining antibodies
XX against a cancer-associated antigen in a sample, determining
XX regression/progression/onset of a cancerous condition (by monitoring a
XX sample from a patient with the cancerous condition from parameters such
XX as NY-ESO-1 protein or a peptide derived from NY-ESO-1 protein, with the
XX antibody that binds to it, where the amount of the parameter is
XX indicative of progression, regression or onset of cancerous conditions),
XX and treating a subject afflicted with a cancerous condition by
XX administering to the subject an antibody that specifically binds to NY-
XX ESO-1 protein or to an ESO-1 derived peptide (e.g. a peptide identified
XX as stimulating a CTL (cytolytic T cell line) identified by SEREX
XX (serological identification of antigens by recombinant expression
XX cloning) expressed on a cancerous cell associated with the cancerous
XX condition) where the antibody is coupled to an anticancer agent. The
XX antibody is useful for treating cancer, e.g. melanoma, hepatoma,
XX lymphoma, or breast, prostate, lung, ovarian, thyroid or bladder cancer,
XX infections or autoimmune disorders. The present sequence represents an
XX HLA (human leukocyte antigen) binding peptide derived from human NY-ESO-1
XX
XX
XX Sequence 9 AA;
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ABU64826 (1-9).
OY 339 TTCGACACCCATGAGCAGAGCTG 365
DB 1 PheIleThrProMetGlnAlaGluIleu 9
XX
RESULT 460
ADA19553
ID ADA19553 standard; peptide; 9 AA.
XX

```

```
XX ADA19553;
XX AC
XX AD19554
XX DT 20-NOV-2003 (first entry)
XX DE Human cancer antigen, NY-ESO-1 (MHC HLA-A2) #2.
XX KW Lymphoid tissue-specific cell; haematopoietic progenitor cell;
XX KW lymphoreticular stromal cell; transplantation; expansion;
XX KW autoimmune disease; infectious disease; maintenance;
XX KW differentiation; T cell tolerance; immune tolerance; T-cell reactivity;
XX KW therapeutic; differentiated progeny; antigen; MHC;
XX KW major histocompatibility complex; cancer; human.
XX OS Homo sapiens.
XX PN US6548299-B1.
XX PD 15-APR-2003.
XX PF 18-MAY-2000; 2000US-00574749.
XX PR 12-NOV-1999; 99WO-US026795.
XX PA (PYKE/) PYKETT M J.
XX PA (ROSE/) ROSENZWEIG M.
XX PA (SCADDEN D T.
XX PA (POZN/) POZNANSKY M C.
XX PI Pykett MJ, Rosenzweig M, Scadden DT, Poznansky MC;
XX DR WPI; 2003-605374/57.
XX PT Producing lymphoid tissue-specific cell in vivo, useful in
XX PT transplantation, implantation, autoimmune and/or infectious diseases by
XX PT introducing hematopoietic progenitor and lymphoreticular stromal cells
XX PT into a porous solid matrix.
XX PS Disclosure; SEQ ID NO 34; 34pp; English.
XX CC The invention discloses a method for producing lymphoid tissue-specific
XX CC cell in vivo, comprising introducing haematopoietic progenitor cells and
XX CC lymphoreticular stromal cells into a porous, solid matrix having
XX CC interconnected pores of a pore size sufficient to permit the cells to
XX CC grow throughout the matrix, and co-culturing the haematopoietic
XX CC progenitor cells and lymphoreticular stromal cells. The methods are
XX CC useful in transplantation, implantation, autoimmune diseases and/or
XX CC infectious diseases. They are particularly useful for in vivo
XX CC maintenance, expansion and/or differentiation of haematopoietic
XX CC progenitor cells, for inducing T cell tolerance, for treating a subject
XX CC to enhance immune tolerance, for inducing T-cell reactivity, and for
XX CC identifying an agent suspected of affecting haematopoietic cell
XX CC development. The lymphoid tissue-specific cells are useful in laboratory
XX CC analysis and in therapeutics. The method provides rapid generation of a
XX CC large number of differentiated progeny. The sequence presented is a
XX CC cancer antigen which was used in the invention to expand haematopoietic
XX CC progenitor cells.
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ADA19553 (1-9)
XX
XX QY 522 TCCCTGTTGATGTGATACGACGATGC 548
XX DB 1 SerineLeuMetTrpIleThrGlnCys 9
```

```
RESULT 461
AD19554
ID ADA19554 standard; peptide: 9 AA.
XX AC
XX AD19554;
XX DT 20-NOV-2003 (first entry)
XX DE Human cancer antigen, NY-ESO-1 (MHC HLA-A2) #3.
XX KW Lymphoid tissue-specific cell; haematopoietic progenitor cell;
XX KW lymphoreticular stromal cell; transplantation; expansion;
XX KW autoimmune disease; infectious disease; maintenance;
XX KW differentiation; T cell tolerance; immune tolerance; T-cell reactivity;
XX KW therapeutic; differentiated progeny; antigen; MHC;
XX KW major histocompatibility complex; cancer; human.
XX OS Homo sapiens.
XX PN US6548299-B1.
XX PD 15-APR-2003.
XX PF 18-MAY-2000; 2000US-00574749.
XX PR 12-NOV-1999; 99WO-US026795.
XX PA (PYKE/) PYKETT M J.
XX PA (ROSE/) ROSENZWEIG M.
XX PA (SCADDEN D T.
XX PA (POZN/) POZNANSKY M C.
XX PI Pykett MJ, Rosenzweig M, Scadden DT, Poznansky MC;
XX DR WPI; 2003-605374/57.
XX PT Producing lymphoid tissue-specific cell in vivo, useful in
XX PT transplantation, implantation, autoimmune and/or infectious diseases by
XX PT introducing hematopoietic progenitor and lymphoreticular stromal cells
XX PT into a porous solid matrix.
XX PS Disclosure; SEQ ID NO 35; 34pp; English.
XX CC The invention discloses a method for producing lymphoid tissue-specific
XX CC cell in vivo, comprising introducing haematopoietic progenitor cells and
XX CC lymphoreticular stromal cells into a porous, solid matrix having
XX CC interconnected pores of a pore size sufficient to permit the cells to
XX CC grow throughout the matrix, and co-culturing the haematopoietic
XX CC progenitor cells and lymphoreticular stromal cells. The methods are
XX CC useful in transplantation, implantation, autoimmune diseases and/or
XX CC infectious diseases. They are particularly useful for in vivo
XX CC maintenance, expansion and/or differentiation of haematopoietic
XX CC progenitor cells, for inducing T cell tolerance, for treating a subject
XX CC to enhance immune tolerance, for inducing T-cell reactivity, and for
XX CC identifying an agent suspected of affecting haematopoietic cell
XX CC development. The lymphoid tissue-specific cells are useful in laboratory
XX CC analysis and in therapeutics. The method provides rapid generation of a
XX CC large number of differentiated progeny. The sequence presented is a
XX CC cancer antigen which was used in the invention to expand haematopoietic
XX CC progenitor cells.
XX SQ Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ADA19554 (1-9)
```

|   |   |  |  |
|---|---|--|--|
| Oy  |   |  | 516 CAGCTTCCCGTTGATGGAAACGC 542<br>     <br>DB |
| Dd  |   |  | 1 GlnueSerLeuNeutrlplethr 9                    |
| <br>  |   |  |  |
| RESULT_462  | ID  | ADCO9165 standard; peptide; 9 AA.  |  |
| ADCO9165  | ID  | ADCO9165   |  |
| ADCO9165;   |   |  |  |
| XZ  | AC  |  |  |
| XX  | PT  | 18-DEC-2003 (first entry)  |  |
| XX  | DE  | Epitope with high affinity for MHC class I #SEQ ID 190.  |  |
| XX  | KM  | Epitope; immunological; vaccine;<br>major histocompatibility complex class I; MHC class I; cancer;<br>immunisation.<br><br>Unidentified. |  |
| OS  | PN  | MW02003008537-A2.  |  |
| XX  | PD  |  |  |
| XX  | PF  | 30-JAN-2003.   |  |
| XX  | PR  | 29-MAR-2002; 2002MO-USO10189.  |  |
| XX  | PA  | 06-APR-2001; 2001US-028221IP.  |  |
| XX  | PI  | 07-NOV-2001; 2001US-033701IP.  |  |
| XX  | PS  | 07-MAR-2002; 2002DS-036321OP.  |  |
| (CTLI-) CTL IMMUNOTHERAPIES CORP.   |   |  |  |
| Sinard JTL, Diamond DC, Liu L, Xie Z;<br>WPL; 2003-248010/24.   |   |  |  |
| Epitope having high affinity for major histocompatibility complex class I useful for treating an animal, evaluating immunogenicity of a vaccine or therapeutic composition and for diagnosing a disease.  |   |  |  |
| Claim 1; SEQ ID NO 190; 239PP; English.   |   |  |  |
| The invention relates to an isolated epitope polypeptide that has high affinity for major histocompatibility complex (MHC) class I, and an epitope cluster comprising the polypeptide. Also disclosed is a vaccine or immunotherapeutic composition containing an epitope of the invention. Compositions can be combined with a radiation therapy, chemotherapy, or method can be combined with surgery. The composition is also useful for evaluating immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC-peptide complexes of the invention are useful for determining specific T-cell frequency. This method is useful for evaluating immunological response, by performing the method prior to and subsequent to an immunisation step. Compositions of the invention are useful for diagnosing a disease. The current sequence represents an epitope of the invention with high affinity for MHC class I. |   |  |  |
| Sequence 9 AA;  |   |  |  |
| Alignment Scores:   |   |  |  |
| Pred. No.:           816  |   |  |  |
| Score:                 9.00   |   |  |  |
| Percent Similarity:   100.00%   |   |  |  |
| Best Local Similarity: 100.00%  |   |  |  |
| Query Match:          5.00%   |   |  |  |
| DB:                      1  |   |  |  |
| Gaps:                   0   |   |  |  |
| US-10-023-182-1 (1-752) x ADC09165 (1-9)  |   |  |  |
| OY  | 405 GTGCCAGGGGTGCTTCGAAGAAGATTTC 431<br>       <br>DB | 1 ValProGIValleuleuLysGLupe 9  |  |

```

RESULT 463
ADCC09147
ID ADCC09147 standard; peptide; 9 AA.
XX
XX AC ADC09147;
XX
XX DT 18-DEC-2003 (first entry)
XX
XX DE Epitope with high affinity for MHC class I #SEQ ID 172.
XX
XX KW Epitope; immunological; vaccine;
XX KW major histocompatibility complex class I; MHC class I; cancer;
XX KW immunisation.
XX
XX OS Unidentified.
XX
XX PN WO2003008537-A2.
XX
XX PD 30-JAN-2003.
XX
XX PE 29-MAR-2002; 2002WO-US010189.
XX
XX PR 06-APR-2001; 2001US-0282211P.
XX PR 07-NOV-2001; 2001US-0337017P.
XX PR 07-MAR-2002; 2002US-0363210P.
XX
XX PA (CTL1-) CTL IMMUNOTHERAPIES CORP.
XX
XX P1 Simard JTL, Diamond DC, Liu L, Xie Z;
XX
XX DR WPI; 2003-248010/24.
XX
XX PT Epitope having high affinity for major histocompatibility complex class I
XX PT useful for treating an animal, evaluating immunogenicity of a vaccine or
XX PT therapeutic composition and for diagnosing a disease.
XX
XX PS Claim 1; SEQ ID NO 172; 239pp; English.
XX
CC The invention relates to an isolated epitope polypeptide that has high
CC affinity for major histocompatibility complex (MHC) class I, and an
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
CC or immunotherapeutic composition containing an epitope of the invention.
CC Compositions of the invention may be used in the treatment of cancer. The
CC method can be combined with a radiation therapy, chemotherapy,
CC biocochemotherapy or surgery. The composition is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
CC-peptide complexes of the invention are useful for determining specific T
CC cell frequency. This method is useful for evaluating immunological
CC response, by performing the method prior to and subsequent to an
CC immunisation step. Compositions of the invention are useful for
CC diagnosing a disease. The current sequence represents an epitope of the
CC invention with high affinity for MHC class I.
XX
SQ Sequence 9 AA;

Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) * ADCC09147 (1-9)

QY 303 GAGAGCCGCGCTGCTGAGTTCTACCTC 329
DB 1 GluSerArgIleuclunlunhethyrlieu 9

RESULT 464
ADCC09160
ID ADCC09160 standard; peptide; 9 AA.

```

```
XX AC ADC09160;
XX DE 18-DEC-2003 (first entry)
XX DT
XX KW Epitope with high affinity for MHC class I #SEQ ID 185.
XX DE
XX KW Epitope; immunological; vaccine;
XX KW major histocompatibility complex class I; MHC class I; cancer;
XX KW immunisation.
XX OS
XX PN WO2003008537-A2.
XX PD
XX PF 30-JAN-2003.
XX DE 29-MAR-2002; 2002WO-US010189.
XX PR 06-APR-2001; 2001US-0282211P.
XX PR 07-NOV-2001; 2001US-0337017P.
XX PR 07-MAR-2002; 2002US-0363210P.
XX PA (CTLI-) CTLI IMMUNOTHERAPIES CORP.
XX PI Simard JLL, Diamond DC, Liu L, Xie Z;
XX DR WPI; 2003-248010/24.
XX DE
XX PT Epitope having high affinity for major histocompatibility complex class I
XX PT useful for treating an animal, evaluating immunogenicity of a vaccine or
XX PT therapeutic composition and for diagnosing a disease.
XX PS Claim 1; SEQ ID NO 185; 239pp; English.
XX DE
XX CC The invention relates to an isolated epitope polypeptide that has high
XX CC affinity for major histocompatibility complex (MHC) class I, and an
XX CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
XX CC or immunotherapeutic composition containing an epitope of the invention.
XX CC Compositions of the invention may be used in the treatment of cancer. The
XX CC method can be combined with a radiation therapy, chemotherapy,
XX CC biochemotherapy or surgery. The composition is also useful for evaluating
XX CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
XX CC -peptide complexes of the invention are useful for determining specific T
XX CC cell frequency. This method is useful for evaluating immunological
XX CC response, by performing the method prior to and subsequent to an
XX CC immunisation step. Compositions of the invention are useful for
XX CC diagnosing a disease. The current sequence represents an epitope of the
XX CC invention with high affinity for MHC class I.
XX SQ
XX Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816
XX Score: 9.00
XX Percent Similarity: 100.00%
XX Best Local Similarity: 100.00%
XX Query Match: 5.00%
XX DB: 1
XX Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ADC09160 (1-9)
XX
XX QY 432 ACTGTCTCCGACATCTACTGATTC 458
XX ID ADC09157
XX AC ADC09157 standard; peptide; 9 AA.
XX DT 18-DEC-2003 (first entry)
```

```
XX DE
XX DE Epitope with high affinity for MHC class I #SEQ ID 182.
XX KW Epitope; immunological; vaccine;
XX KW major histocompatibility complex class I; MHC class I; cancer;
XX KW immunisation.
XX OS
XX PN WO2003008537-A2.
XX PD
XX PF 30-JAN-2003.
XX DE 29-MAR-2002; 2002WO-US010189.
XX PR 06-APR-2001; 2001US-0282211P.
XX PR 07-NOV-2001; 2001US-0337017P.
XX PR 07-MAR-2002; 2002US-0363210P.
XX PA (CTLI-) CTLI IMMUNOTHERAPIES CORP.
XX PI Simard JLL, Diamond DC, Liu L, Xie Z;
XX DR WPI; 2003-248010/24.
XX DE
XX PT Epitope having high affinity for major histocompatibility complex class I
XX PT useful for treating an animal, evaluating immunogenicity of a vaccine or
XX PT therapeutic composition and for diagnosing a disease.
XX PS Claim 1; SEQ ID NO 182; 239pp; English.
XX DE
XX CC The invention relates to an isolated epitope polypeptide that has high
XX CC affinity for major histocompatibility complex (MHC) class I, and an
XX CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine
XX CC or immunotherapeutic composition containing an epitope of the invention.
XX CC Compositions of the invention may be used in the treatment of cancer. The
XX CC method can be combined with a radiation therapy, chemotherapy,
XX CC biochemotherapy or surgery. The composition is also useful for evaluating
XX CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
XX CC -peptide complexes of the invention are useful for determining specific T
XX CC cell frequency. This method is useful for evaluating immunological
XX CC response, by performing the method prior to and subsequent to an
XX CC immunisation step. Compositions of the invention are useful for
XX CC diagnosing a disease. The current sequence represents an epitope of the
XX CC invention with high affinity for MHC class I.
XX SQ
XX Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816
XX Score: 9.00
XX Percent Similarity: 100.00%
XX Best Local Similarity: 100.00%
XX Query Match: 5.00%
XX DB: 1
XX Gaps: 0
XX
XX US-10-023-182-1 (1-752) x ADC09157 (1-9)
XX
XX QY 405 GTGCGAGGGGTCCTTCGAAGAGTTC 431
XX ID ADC09162
XX AC ADC09162 standard; peptide; 9 AA.
XX DT 18-DEC-2003 (first entry)
XX DE Epitope with high affinity for MHC class I #SEQ ID 187.
XX KW Epitope; immunological; vaccine;
```



KW major histocompatibility complex class I; MHC class I; cancer;  
immunisation.  
XX  
XX Unidentified.  
OS  
FN WO2003008537-A2.  
XX  
XX 30-JAN-2003.  
PD  
XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTL-) CTL IMMUNOTHERAPIES CORP.  
PA  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
XX WPI; 2003-248010/24.  
DR  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 187; 239pp; English.  
PS  
XX The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biocompatibility or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
XX Sequence 9 AA;  
SQ  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09162 (1-9)  
QY 411 GGGGTGCTTGAAGAGTTCAGTGTG 437  
Db 1 GlyValIleuLeuYSGluPheThrVal 9  
RESULT 467  
ADC09148  
ID ADC09148 standard; peptide; 9 AA.  
XX  
XX ADC09148;  
AC  
XX 18-DEC-2003 (first entry)  
DT  
XX Epitope with high affinity for MHC class I #SEQ ID 173.  
DE  
XX Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.

XX  
XX WO2003008537-A2.  
FN  
XX 30-JAN-2003.  
PD  
XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTL-) CTL IMMUNOTHERAPIES CORP.  
PA  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
XX WPI; 2003-248010/24.  
DR  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 173; 239pp; English.  
PS  
XX The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biocompatibility or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
XX Sequence 9 AA;  
SQ  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09148 (1-9)  
QY 309 GGGGTGCTTGAAGTTCAGTTCAGCATG 335  
Db 1 ArgIleuLeuGluPheThrValMet 9  
RESULT 468  
ADC09149  
ID ADC09149 standard; peptide; 9 AA.  
XX  
XX ADC09149;  
AC  
XX 18-DEC-2003 (first entry)  
DT  
XX Epitope with high affinity for MHC class I #SEQ ID 174.  
DE  
XX Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.  
OS  
XX WO2003008537-A2.  
FN  
XX 30-JAN-2003.  
PD

XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
DR  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 174; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09149 (1-9)  
QY 315 CTTGAGTCTACGCGCATGCGCTTC 341  
DB 1 LeuGluPheTYrLeuAlaMetProPhe 9  
RESULT 469  
ADC09172  
ID ADC09172 standard; peptide; 9 AA.  
XX  
AC ADC09172;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 197.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.

PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
DR  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 197; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09172 (1-9)  
QY 522 TCCTGTTGATGTGATCAGCAGTGC 548  
DB 1 SerLeuMetMetPrlleThrGlnCys 9  
RESULT 470  
ADC09329  
ID ADC09329 standard; peptide; 9 AA.  
XX  
AC ADC09329;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 354.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.

|    |  |   |
|----|--|---|
| XX | PI   | Simard JTL, Diamond DC, Liu L, Xie Z;                                     |
| XX | DR   | WPI; 2003-248010/24.  |
| XX | PT   | Epitope having high affinity for major histocompatibility complex class I |
| XX | PT   | useful for treating an animal, evaluating immunogenicity of a vaccine or  |
| XX | PT   | therapeutic composition and for diagnosing a disease.                     |
| XX | PS   | Claim 1; SEQ ID NO 354; 239pp; English.                                   |
| XX | CC   | The invention relates to an isolated epitope polypeptide that has high    |
| XX | CC   | affinity for major histocompatibility complex (MHC) class I, and an       |
| XX | CC   | epitope cluster comprising the polypeptide. Also disclosed is a vaccine   |
| XX | CC   | or immunotherapeutic composition containing an epitope of the invention.  |
| XX | CC   | Compositions of the invention may be used in the treatment of cancer. The |
| XX | CC   | method can be combined with a radiation therapy, chemotherapy,            |
| XX | CC   | biochemotherapy or surgery. The composition is also useful for evaluating |
| XX | CC   | immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC |
| XX | CC   | -peptide complexes of the invention are useful for determining specific T |
| XX | CC   | cell frequency. This method is useful for evaluating immunological        |
| XX | CC   | response, by performing the method prior to and subsequent to an          |
| XX | CC   | immunisation step. Compositions of the invention are useful for           |
| XX | CC   | diagnosing a disease. The current sequence represents an epitope of the   |
| XX | CC   | invention with high affinity for MHC class I.                             |
| XX | SO   | Sequence 9 AA;  |
| XX | Alignment Scores:  |   |
| XX | Pred. No.:   | 816   |
| XX | Score:   | 9.00  |
| XX | Percent Similarity:  | 100.00%   |
| XX | Best Local Similarity:   | 100.00%   |
| XX | Query Match:   | 5.00%   |
| XX | DB:  | 1   |
| XX | Gaps:  | 0   |
| XX | US-10-023-182-1 (1-752) x ADC09329 (1-9)                       |   |
| QY | 252  | GGCGCGCTTCAGGGCTGAATGATGC 278   |
| DB | 1  | GlyAlaAlaSerCjLyeuSenGjCys 9  |
| XX | RESULT 471   |   |
| XX | ADC09167   |   |
| XX | ID   | ADC09167 standard; peptide; 9 AA.   |
| XX | AC   |   |
| XX | ADC09167;  |   |
| XX | DT   | 18-DEC-2003 (first entry)   |
| XX | XX   |   |
| XX | XX   | Epitope with high affinity for MHC class I #SEQ ID 192.                   |
| KW | Epitope; immunological; vaccine;                               |   |
| KW | major histocompatibility complex class I; MHC class I; cancer; |   |
| KW | immunisation.  |   |
| XX | Unidentified.  |   |
| OS |  |   |
| XX | WO2003008537-A2.   |   |
| PN |  |   |
| XX | 30-JAN-2003.   |   |
| XX |  |   |
| XX | 29-MAR-2002; 2002MO-US010189.                                  |   |
| XX |  |   |
| XX | 06-APR-2001; 2001US-0282211P.                                  |   |
| PR | 07-NOV-2001; 2001US-0337017P.                                  |   |
| XX | 07-MAR-2002; 2002US-0363210P.                                  |   |
| XX |  |   |
| XX | (CTL1-) CTL IMMUNOTHERAPIES CORP.                              |   |
| XX |  |   |
| XX | Simard JTL, Diamond DC, Liu L, Xie Z;                          |   |
| XX |  |   |
| XX | WPI; 2003-248010/24.   |   |

XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.

PS Claim 1; SEQ ID NO 192; 239pp; English.

XX The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biophemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.

XX Sequence 9 AA;

SO

Alignment Scores:

|                        |         |               |   |
|------------------------|---------|---------------|---|
| Pred. No.:             | 816     | Length:       | 9 |
| Score:                 | 9.00    | Matches:      | 9 |
| Percent Similarity:    | 100.00% | Conservative: | 0 |
| Best Local Similarity: | 100.00% | Mismatches:   | 0 |
| Query Match:           | 5.00%   | Indels:       | 0 |
| DB:                    | 1       | Gaps:         | 0 |

US-10-023-182-1 (1-752) x ADC09167 (1-9)

QY 468 GCTGACAGCCAGCGCAACTGAGCTC 494

Db 1 AlaAlaSPHisArgGlnLeuGlnLeu 9

RESULT 472

ADC09145

XX ADC09145 strand; peptide; 9 AA.

XX 18-DEC-2003 (first entry)

XX

DE Epitope with high affinity for MHC class I #SEQ ID 170.

XX

KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.

XX

OS Unidentified.

XX

PN WO2003008537-A2.

XX

PD 30-JAN-2003.

XX

PF 29-MAR-2002; 2002WO-US010189.

XX

PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.

XX

PA (CTL1-) CTL IMMUNOTHERAPIES CORP.

XX

PI Simard JTL, Diamond DC, Liu L, Xie Z;

XX

DR WPI; 2003-248010/24.

XX

PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.

XX Claim 1; SEQ ID NO 170; 239pP; English.

PS The invention relates to an isolated epitope polypeptide that has high

CC affinity for major histocompatibility complex (MHC) class I, and an

CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine

CC or immunotherapeutic composition containing an epitope of the invention.

CC Compositions of the invention may be used in the treatment of cancer. The

CC method can be combined with a radiation therapy, chemotherapy,

CC biochemotherapy or surgery. The composition is also useful for evaluating

CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC

CC-peptide complexes of the invention are useful for determining specific T

CC cell frequency. This method is useful for evaluating immunological

CC response, by performing the method prior to and subsequent to an

CC immunisation step. Compositions of the invention are useful for

CC diagnosing a disease. The current sequence represents an epitope of the

CC invention with high affinity for MHC class I.

XX SQ Sequence 9 AA;

XX Alignment Scores:

Pred. No.: 816 Length: 9

Score: 9.00 Matches: 9

Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.00% Indels: 0

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09145 (1-9)

OY 300 CCGAGAGCCCGCTTGAGTTCTAC 326

DB 1 ProGluSerArgLeuGluGluPheTyr 9

RESULT 473

ADC09152

ID ADC09152 standard; peptide; 9 AA.

XX ADC09152;

XX 18-DEC-2003 (first entry)

DT Epitope with high affinity for MHC class I #SEQ ID 177.

DE Epitope; immunological; vaccine;

XX major histocompatibility complex class I; MHC class I; cancer;

KW immunisation.

XX OS Unidentified.

OS WO2003008537-A2.

XX 30-JAN-2003.

PD 29-MAR-2002; 2002WO-US010189.

XX 06-APR-2001; 2001US-0282211P.

PR 07-NOV-2001; 2001US-0337017P.

PR 07-MAR-2002; 2002US-0363210P.

XX (CTLI-) CTL IMMUNOTHERAPIES CORP.

PA Simard JTL, Diamond DC, Liu L, Xie Z;

PI WPI; 2003-248010/24.

DR Epitope having high affinity for major histocompatibility complex class I

XX useful for treating an animal, evaluating immunogenicity of a vaccine or

PT therapeutic composition and for diagnosing a disease.

XX Claim 1; SEQ ID NO 177; 239pP; English.

PS The invention relates to an isolated epitope polypeptide that has high

CC

CC affinity for major histocompatibility complex (MHC) class I, and an

CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine

CC or immunotherapeutic composition containing an epitope of the invention.

CC Compositions of the invention may be used in the treatment of cancer. The

CC method can be combined with a radiation therapy, chemotherapy,

CC biochemotherapy or surgery. The composition is also useful for evaluating

CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC

CC-peptide complexes of the invention are useful for determining specific T

CC cell frequency. This method is useful for evaluating immunological

CC response, by performing the method prior to and subsequent to an

CC immunisation step. Compositions of the invention are useful for

CC diagnosing a disease. The current sequence represents an epitope of the

CC invention with high affinity for MHC class I.

XX SQ Sequence 9 AA;

XX Alignment Scores:

Pred. No.: 816 Length: 9

Score: 9.00 Matches: 9

Percent Similarity: 100.00% Conservative: 0

Best Local Similarity: 100.00% Mismatches: 0

Query Match: 5.00% Indels: 0

DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09152 (1-9)

OY 333 ATGCTTTCGAGACCCATGAGCA 359

DB 1 MetProPheAlaThrProMetGluAla 9

RESULT 474

ADC09171

ID ADC09171 standard; peptide; 9 AA.

XX ADC09171;

XX 18-DEC-2003 (first entry)

DT Epitope with high affinity for MHC class I #SEQ ID 196.

DE Epitope; immunological; vaccine;

XX major histocompatibility complex class I; MHC class I; cancer;

KW immunisation.

XX OS Unidentified.

OS WO2003008537-A2.

XX 30-JAN-2003.

PD 29-MAR-2002; 2002WO-US010189.

XX 06-APR-2001; 2001US-0282211P.

PR 07-NOV-2001; 2001US-0337017P.

PR 07-MAR-2002; 2002US-0363210P.

XX (CTLI-) CTL IMMUNOTHERAPIES CORP.

PA Simard JTL, Diamond DC, Liu L, Xie Z;

PI WPI; 2003-248010/24.

DR Epitope having high affinity for major histocompatibility complex class I

XX useful for treating an animal, evaluating immunogenicity of a vaccine or

PT therapeutic composition and for diagnosing a disease.

XX Claim 1; SEQ ID NO 196; 239pP; English.

PS The invention relates to an isolated epitope polypeptide that has high

CC affinity for major histocompatibility complex (MHC) class I, and an

CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine

CC or immunotherapeutic composition containing an epitope of the invention.

CC Compositions of the invention may be used in the treatment of cancer. The

CC

CC method can be combined with a radiation therapy, chemotherapy,  
CC biocompatibility or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.

XX  
SQ Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09171 (1-9)

OY 534 TGGATCAGCGAGTGTCTTCCCGCTG 560  
ID ADC09175  
DB 1 TrrpleThrgInCySpheluProval 9

RESULT 475  
ADC09175  
XX ADC09175;  
XX  
XX  
XX 18-DEC-2003 (first entry)  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 200.  
XX  
XX Epitope; immunological; vaccine;  
XX major histocompatibility complex class I; MHC class I; cancer;  
XX immunisation.  
XX  
XX Unidentified.  
XX  
XX WO2003008537-A2.  
XX  
XX 30-JAN-2003.  
XX  
XX 29-MAR-2002; 2002WO-US010189.  
XX  
XX 06-APR-2001; 2001US-0282211P.  
XX 07-NOV-2001; 2001US-0337017P.  
XX 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
XX useful for treating an animal, evaluating immunogenicity of a vaccine or  
XX therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 200; 239pp; English.

XX The invention relates to an isolated epitope polypeptide that has high  
XX affinity for major histocompatibility complex (MHC) class I, and an  
XX epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
XX or immunotherapeutic composition containing an epitope of the invention.  
XX Compositions of the invention may be used in the treatment of cancer. The  
XX method can be combined with a radiation therapy, chemotherapy,  
XX biocompatibility or surgery. The composition is also useful for evaluating  
XX immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
XX-peptide complexes of the invention are useful for determining specific T

CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.

XX  
SQ Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09175 (1-9)

OY 504 TCGTGTCTCCAGCAGCTTCCCTGTG 530  
ID ADC09330  
DB 1 SerCysleuGInGlnleuSerleu 9

RESULT 476  
ADC09330  
XX ADC09330 standard; peptide; 9 AA.  
XX  
XX  
XX ADC09330;  
XX  
XX  
XX 18-DEC-2003 (first entry)  
XX  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 355.  
XX  
XX Epitope; immunological; vaccine;  
XX major histocompatibility complex class I; MHC class I; cancer;  
XX immunisation.  
XX  
XX Unidentified.  
XX  
XX WO2003008537-A2.  
XX  
XX 30-JAN-2003.  
XX  
XX 29-MAR-2002; 2002WO-US010189.  
XX  
XX 06-APR-2001; 2001US-0282211P.  
XX 07-NOV-2001; 2001US-0337017P.  
XX 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
XX WPI; 2003-248010/24.  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
XX useful for treating an animal, evaluating immunogenicity of a vaccine or  
XX therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 355; 239pp; English.

XX The invention relates to an isolated epitope polypeptide that has high  
XX affinity for major histocompatibility complex (MHC) class I, and an  
XX epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
XX or immunotherapeutic composition containing an epitope of the invention.  
XX Compositions of the invention may be used in the treatment of cancer. The  
XX method can be combined with a radiation therapy, chemotherapy,  
XX biocompatibility or surgery. The composition is also useful for evaluating  
XX immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
XX-peptide complexes of the invention are useful for determining specific T  
XX cell frequency. This method is useful for evaluating immunological  
XX response, by performing the method prior to and subsequent to an  
XX immunisation step. Compositions of the invention are useful for  
XX diagnosing a disease. The current sequence represents an epitope of the

CC invention with high affinity for MHC class I.  
XX Sequence 9 AA;  
SQ  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09330 (1-9)  
QY 207 AGGCGCTCGGGCCGAGAGAGCGCC 233  
ID |||||  
ADC09173 1 ArgAlaSerGlyProGlyGlyAla 9  
RESULT 477  
ID ADC09173 standard; peptide; 9 AA.  
XX  
AC ADC09173;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 198.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-248010/24.  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 198; 239pp; English.  
XX  
The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC -peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
SQ Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09173 (1-9)  
QY 501 AGCTCGTCTCCAGACCTTCCCTG 527  
ID |||||  
ADC09174 1 SerSerCysLeuGlnGlnLeuSerIeu 9  
RESULT 478  
ID ADC09174 standard; peptide; 9 AA.  
XX  
AC ADC09174;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 199.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
DR WPI; 2003-248010/24.  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 199; 239pp; English.  
XX  
The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC -peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
SQ Sequence 9 AA;  
XX  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0

```

Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09174 (1-9)

OY      513 CAGCAGCTTCCCTGTGATGGTGATC 539
Db      |||||
        |GlnGlnLeuSerLeuLeuMetTrpIle 9

RESULT 479
ADC09153
ID      ADC09153 standard; peptide; 9 AA.
XX
AC      ADC09153;
XX
DT      18-DEC-2003 (first entry)
XX
DE      Epitope with high affinity for MHC class I #SEQ ID 178.
XX
KW      Epitope; immunological; vaccine;
KM      major histocompatibility complex class I; MHC class I; cancer;
XX      immunisation.
XX
OS      Unidentified.
XX
PN      WO2003008537-A2.
XX
PD      30-JAN-2003.
XX
PF      29-MAR-2002; 2002WO-US010189.
XX
PR      06-APR-2001; 2001US-028221P.
PR      07-NOV-2001; 2001US-033701P.
PR      07-MAR-2002; 2002US-036321OP.
XX
PA      (CTL-I-) CTL IMMUNOTHERAPIES CORP.
XX
PI      Simard UTL, Diamond DC, Liu L, Xie Z;
DR      WPI; 2003-248010/24.

Epitope having high affinity for major histocompatibility complex class I useful for treating an animal, evaluating immunogenicity of a vaccine or therapeutic composition and for diagnosing a disease.

Claim 1; SEQ ID NO 178; 239pp; English.

The invention relates to an isolated epitope polypeptide that has high affinity for major histocompatibility complex (MHC) class I, and an epitope cluster comprising the polypeptide. Also disclosed is a vaccine or immunotherapeutic composition containing an epitope of the invention. Compositions of the invention may be used in the treatment of cancer. The method can be combined with a radiation therapy, chemotherapy, biochemicaltherapy or surgery. The composition is also useful for evaluating immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC-peptide complexes of the invention are useful for determining immunological cell frequency. This method is useful for evaluating immunological response, by performing the method prior to and subsequent to an immunisation step. Compositions of the invention are useful for diagnosing a disease. The current sequence represents an epitope of the invention with high affinity for MHC class I.

SQ      Sequence 9 AA;

Alignment Scores:
Pred. No.:      816          Length:      9
Score:           9.00         Matches:     9
Percent Similarity: 100.00%   Conservative: 0
Best Local Similarity: 100.00% Mismatches:    0
Query Match:     5.00%       Indels:      0
DB:              1          Gaps:         0

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US-10-023-182-1 (1-752) x ADC09153 (1-9)
QY 396 CGCGTTCCTCCGTCGACAGGGGCTTCTG 422
  |||||
  |||||
Db 1 ProLeupProValProGlyValIleuLeu 9

RESULT 480
ID ADC09164
ADC09164 standard; peptide; 9 AA.
XX
AC
XX ADC09164;
XX
DT 18-DEC-2003 (first entry)
XX
DE Epitope with high affinity for MHC class I #SEQ ID 189.
XX
KW Epitope; immunological; vaccine;
KW major histocompatibility complex class I; MHC class I; cancer;
KW immunisation.
XX
OS Unidentified.
OS
PN W02003008537-AZ.
XX
PD 30-JAN-2003.
XX
PF 29-MAR-2002; 2002WO-US010189.
XX
PR 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX
PA (CTL1-) CTL IMMUNOTHERAPIES CORP.
XX
PI Simard JDL, Diamond DC, Liu L, Xie Z;
XX
DR WPI; 2003-248010/24.
XX
PT Epitope having high affinity for major histocompatibility complex class I
PT useful for treating an animal, evaluating immunogenicity of a vaccine or
PT therapeutic composition and for diagnosing a disease.
XX
PS Claim 1; SEQ ID NO 189; 239pp; English.
XX
XX
XX The invention relates to an isolated epitope polypeptide that has high
XX affinity for major histocompatibility complex (MHC) class I, and an
XX epitope cluster comprising the polypeptide. Also disclosed is a vaccine
XX or immunotherapeutic composition containing an epitope of the invention.
XX Compositions of the invention may be used in the treatment of cancer. The
XX method can be combined with a radiation therapy, chemotherapy,
XX radiochemotherapy or surgery. The composition is also useful for evaluating
XX immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC
XX -peptide complexes of the invention are useful for determining specific T
XX cell frequency. This method is useful for evaluating immunological
XX response. By performing the method prior to and subsequent to an
XX immunisation step. Compositions of the invention are useful for
XX diagnosing a disease. The current sequence represents an epitope of the
XX invention with high affinity for MHC class I.
XX
XX Sequence 9 AA;
XX
XX Alignment Scores:
XX Pred. No.: 816 Length: 9
XX Score: 9.00 Matches: 9
XX Percent Similarity: 100.00% Conservative: 0
XX Best Local Similarity: 100.00% Mismatches: 0
XX Query Match: 5.00% Indels: 0
XX DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09164 (1-9)
QY 417 CTTCTGAGAGGTTCACTGTGTCCGCG 443
  |||||
  |||||
  |||||

```

Db 1 LeuLeuLySGluPheThrValSerGly 9

RESULT 481  
ADC09168  
ID ADC09168 standard; peptide; 9 AA.  
XX  
XX ADC09168;  
AC  
XX 18-DEC-2003 (first entry)  
DT  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 193.  
DE  
XX  
XX Epitope; immunological; vaccine;  
KM major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.  
OS  
XX WO2003008537-A2.  
PN  
XX 30-JAN-2003.  
PD  
XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
PI WPI; 2003-248010/24.  
DR  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PI therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 193; 239pp; English.

The invention relates to an isolated epitope polypeptide that has high affinity for major histocompatibility complex (MHC) class I; and an epitope cluster comprising the polypeptide. Also disclosed is a vaccine or immunotherapeutic composition containing an epitope of the invention. Compositions of the invention may be used in the treatment of cancer. The method can be combined with a radiation therapy, chemotherapy, cell frequency. This method is useful for evaluating immunological response, by performing the method prior to and subsequent to an immunisation step. Compositions of the invention are useful for diagnosing a disease. The current sequence represents an epitope of the invention with high affinity for MHC class I.

XX  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09168 (1-9)

OY 495 TCATCAGCTCTGTCTCCAGCAGCTT 521  
DB 1 SerIleSerSerCysIleuGlnGlnIleu 9

RESULT 482  
ADC09144

ID ADC09144 standard; peptide; 9 AA.  
XX  
XX ADC09144;  
AC  
XX 18-DEC-2003 (first entry)  
DT  
XX  
XX Epitope with high affinity for MHC class I #SEQ ID 169.  
DE  
XX  
XX Epitope; immunological; vaccine;  
KM major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.  
OS  
XX WO2003008537-A2.  
PN  
XX 30-JAN-2003.  
PD  
XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
PI WPI; 2003-248010/24.  
DR  
XX  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PI therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 169; 239pp; English.

The invention relates to an isolated epitope polypeptide that has high affinity for major histocompatibility complex (MHC) class I; and an epitope cluster comprising the polypeptide. Also disclosed is a vaccine or immunotherapeutic composition containing an epitope of the invention. Compositions of the invention may be used in the treatment of cancer. The method can be combined with a radiation therapy, chemotherapy, cell frequency. This method is useful for evaluating immunological response, by performing the method prior to and subsequent to an immunisation step. Compositions of the invention are useful for diagnosing a disease. The current sequence represents an epitope of the invention with high affinity for MHC class I.

XX  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADC09144 (1-9)

OY 297 GGCGCGAGAGCGCGCTGTGAGTTC 323  
DB 1 GlyProGluSerArgLeuLeuGluPhe 9

RESULT 483  
ADC09177  
ID ADC09177 standard; peptide; 9 AA.  
XX  
XX ADC09177;



DT 18-DEC-2003 (first entry)  
XX Epitope with high affinity for MHC class I #SEQ ID 202.  
DE  
XX Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.  
OS  
XX WO2003008537-A2.  
PN  
XX 30-JAN-2003.  
PD  
XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
PI WPI; 2003-248010/24.  
DR  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 202; 239pp; English.  
PS  
XX The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy, or  
CC immunotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
XX Sequence 9 AA;  
SQ  
XX  
XX Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09177 (1-9)  
QY 540 ACGCAGTGGCTTGTGCGCGGTGTTTGG 566  
ID |||||||  
DB 1 ThrGlnCyPheLeuPrcValPheLeu 9  
RESULT 484  
ADCO9331  
ID ADC09331 standard; peptide; 9 AA.  
XX  
XX ADC09331;  
AC  
XX 18-DEC-2003 (first entry)  
DT  
XX Epitope with high affinity for MHC class I #SEQ ID 356.  
DB  
XX

KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
XX Unidentified.  
OS  
XX WO2003008537-A2.  
PN  
XX 30-JAN-2003.  
PD  
XX 29-MAR-2002; 2002WO-US010189.  
PF  
XX 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.  
PA  
XX Simard JTL, Diamond DC, Liu L, Xie Z;  
PI WPI; 2003-248010/24.  
DR  
XX Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
XX Claim 1; SEQ ID NO 356; 239pp; English.  
PS  
XX The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy, or  
CC immunotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
XX  
XX Sequence 9 AA;  
SQ  
XX  
XX Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09331 (1-9)  
QY 243 CCGCATGGCGGCGGCTTCAGGCGTG 269  
ID |||||||  
DB 1 ProHisGlyGlyAlaAlaSerGlyLeu 9  
RESULT 485  
ADD3553  
ID ADD3553 standard; peptide; 9 AA.  
XX  
XX ADD3553;  
AC  
XX 15-JAN-2004 (first entry)  
DT  
XX Human NY-ESO-1 peptide SEQ ID NO:3.  
DE  
XX human leukocyte antigen; HLA; cytolytic T cell stimulator;  
KW immune response; cytostatic; gene therapy; human; NY-ESO-1;  
KW immunogenic tumour antigen.  
XX

OS Homo sapiens.  
XX  
XX WO2003068800-A2.  
XX  
XX 21-AUG-2003.  
PD  
XX 12-FEB-2003; 2003WO-US004182.  
PF  
XX 13-FEB-2002; 2002US-0355828P.  
PR  
XX (LUDWIG-) LUDWIG INST CANCER RES.  
PA  
XX Jager E, Knuth A, Old L, Gnajatic S;  
PI WPI, 2003-902684/82.  
DR  
XX  
XX New isolated peptide that binds to an HLA molecule, useful for treating a  
PT subject with a disorder characterized by the presence of complexes of an  
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune  
PT response.  
PS  
XX Claim 1; SEQ ID NO 3; 73pp; English.  
XX  
XX The present invention describes an isolated peptide (1) consisting of 8-  
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-  
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for  
CC complexes of the peptide and the HLA molecule, where at least 8  
CC contiguous amino acids of the peptide consist of at least 8 contiguous  
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also  
CC described: (1) a composition comprising (1) and a carrier; (2) an  
CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an  
CC expression vector comprising the nucleic acid of (2) in operable linkage  
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
CC isolated tetramer comprising the HLA molecule, biotin and a binding  
CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
CC inducing an immune response in a subject; (12) treating a subject with a  
CC disorder characterized by the presence of complexes of an HLA molecule  
CC and the peptide; (13) a combinatorial library of derivatives of (1),  
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
CC for an analogue of (1); (15) an isolated antibody or its fragment that  
CC specifically binds a HLA/peptide complex, or (1); (16) an isolated  
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
CC and (17) inducing an immune response on a subject having a disorder  
CC characterised by the presence of the HLA molecule and the peptide. (1)  
CC has cyostatic activity, and can be used in gene therapy. The peptides,  
CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
CC useful for treating a subject with a disorder characterised by the  
CC presence of complexes of an HLA molecule and the peptide, and for  
CC inducing an immune response. The present sequence represents a human NY-  
CC ESO-1 peptide, which is used in the exemplification of the present  
CC invention. NY-ESO-1 is an immunogenic tumour antigen.  
XX  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADD35553 (1-9)  
OY 375 AGCCTGCGCCAGGATGCCCGACCGCTT 401  
Db ||||||||||||||||||||||||||||  
1 SerLeuAlaGlnAspAlaProIleu 9  
RESULT 486

ADD35561  
ID ADD35561 standard; peptide; 9 AA.  
XX  
XX  
XX ADD35561;  
AC  
XX  
XX 15-JAN-2004 (first entry)  
DT  
XX  
XX Human NY-ESO-1 peptide SEQ ID NO:11.  
DE  
XX  
XX human leukocyte antigen; HLA; cytolytic T cell stimulator;  
KM immune response; cyostatic; gene therapy; human; NY-ESO-1;  
KM immunogenic tumour antigen.  
XX  
XX Homo sapiens.  
OS  
XX  
XX WO2003068800-A2.  
PN  
XX  
XX 21-AUG-2003.  
PD  
XX  
XX 12-FEB-2003; 2003WO-US004182.  
PF  
XX  
XX 13-FEB-2002; 2002US-0355828P.  
PR  
XX  
XX (LUDWIG-) LUDWIG INST CANCER RES.  
PA  
XX Jager E, Knuth A, Old L, Gnajatic S;  
PI WPI, 2003-902684/82.  
DR  
XX  
XX New isolated peptide that binds to an HLA molecule, useful for treating a  
PT subject with a disorder characterized by the presence of complexes of an  
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune  
PT response.  
PS  
XX  
XX Example 1; SEQ ID NO 11; 73pp; English.  
XX  
XX The present invention describes an isolated peptide (1) consisting of 8-  
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-  
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for  
CC complexes of the peptide and the HLA molecule, where at least 8  
CC contiguous amino acids of the peptide consist of at least 8 contiguous  
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also  
CC described: (1) a composition comprising (1) and a carrier; (2) an  
CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an  
CC expression vector comprising the nucleic acid of (2) in operable linkage  
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
CC isolated tetramer comprising the HLA molecule, biotin and a binding  
CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
CC inducing an immune response in a subject; (12) treating a subject with a  
CC disorder characterized by the presence of complexes of an HLA molecule  
CC and the peptide; (13) a combinatorial library of derivatives of (1),  
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
CC for an analogue of (1); (15) an isolated antibody or its fragment that  
CC specifically binds a HLA/peptide complex, or (1); (16) an isolated  
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
CC and (17) inducing an immune response on a subject having a disorder  
CC characterised by the presence of the HLA molecule and the peptide. (1)  
CC has cyostatic activity, and can be used in gene therapy. The peptides,  
CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
CC useful for treating a subject with a disorder characterised by the  
CC presence of complexes of an HLA molecule and the peptide, and for  
CC inducing an immune response. The present sequence represents a human NY-  
CC ESO-1 peptide, which is used in the exemplification of the present  
CC invention. NY-ESO-1 is an immunogenic tumour antigen.  
XX  
XX  
SQ Sequence 9 AA;  
Alignment Scores:  
Pred. No.: 816 Length: 9

```
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ADD35561 (1-9)

QY 516 CAGCTTCCGTGATGATCAG 542
Db 1 GlnLeuSerLeuLeuMetTrpIleThr 9

RESULT 487
ADD35554
ID ADD35554 standard; peptide: 9 AA.
XX
AC ADD35554;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:4.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytosstatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
MO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PE 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjaatic S;
XX
WP1; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Claim 1; SEQ ID NO 4; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polypeptide; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
CC specific for a complex of the HLA molecule and (I); (6) detecting the CTL
CC of (5); (7) a polypeptide comprising at least two of (I) that are linked
CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an
CC isolated tetramer comprising the HLA molecule, biotin and a binding
CC partner; (10) a composition comprising the tetramer and a carrier; (11)
CC inducing an immune response in a subject; (12) treating a subject with a
CC disorder characterized by the presence of complexes of an HLA molecule
CC and the peptide; (13) a combinatorial library of derivatives of (I),
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay
CC for an analogue of (I); (15) an isolated antibody or its fragment that
CC specifically binds a HLA-peptide complex, or (1); (16) an isolated
CC soluble T cell receptor that specifically binds to a HLA-peptide complex;
CC and (17) inducing an immune response on a subject having a disorder
```

```
CC characterised by the presence of the HLA molecule and the peptide. (1)
CC has cytostatic activity, and can be used in gene therapy. The peptides,
CC nucleic acid molecules, vectors, compositions, antibodies and methods are
CC useful for treating a subject with a disorder characterised by the
CC presence of complexes of an HLA molecule and the peptide, and for
CC inducing an immune response. The present sequence represents a human NY-
CC ESO-1 peptide, which is used in the exemplification of the present
CC invention. NY-ESO-1 is an immunogenic tumour antigen.
XX
SQ Sequence 9 AA;
XX
Alignment Scores:
Pred. No.: 816 Length: 9
Score: 9.00 Matches: 9
Percent Similarity: 100.00% Conservative: 0
Best Local Similarity: 100.00% Mismatches: 0
Query Match: 5.00% Indels: 0
DB: 1 Gaps: 0
US-10-023-182-1 (1-752) x ADD35554 (1-9)

QY 324 TACCTCGGCATGCCTTTCGCGACACCC 350
Db 1 TyrIleuAlaMetProPheAlaThrPro 9

RESULT 488
ADD35552
ID ADD35552 standard; peptide: 9 AA.
XX
AC ADD35552;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human NY-ESO-1 peptide SEQ ID NO:2.
XX
KW human leukocyte antigen; HLA; cytolytic T cell stimulator;
KW immune response; cytosstatic; gene therapy; human; NY-ESO-1;
KW immunogenic tumour antigen.
XX
OS Homo sapiens.
XX
MO2003068800-A2.
XX
PD 21-AUG-2003.
XX
PE 12-FEB-2003; 2003WO-US004182.
XX
PR 13-FEB-2002; 2002US-0355828P.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Jager E, Knuth A, Old L, Gnjaatic S;
XX
WP1; 2003-902684/82.
XX
PT New isolated peptide that binds to an HLA molecule, useful for treating a
PT subject with a disorder characterized by the presence of complexes of an
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune
PT response.
XX
PS Claim 1; SEQ ID NO 2; 73pp; English.
XX
CC The present invention describes an isolated peptide (I) consisting of 8-
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for
CC complexes of the peptide and the HLA molecule, where at least 8
CC contiguous amino acids of the peptide consist of at least 8 contiguous
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also
CC described: (1) a composition comprising (I) and a carrier; (2) an
CC isolated nucleic acid molecule encoding (I) or the polypeptide; (3) an
CC expression vector comprising the nucleic acid of (2) in operable linkage
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)
```

CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
CC isolated tetramer comprising the HLA molecule, biotin and a binding  
CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
CC inducing an immune response in a subject; (12) treating a subject with a  
CC disorder characterised by the presence of complexes of an HLA molecule  
CC and the peptide; (13) a combinatorial library of derivatives of (1),  
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
CC for an analogue of (1); (15) an isolated antibody or its fragment that  
CC specifically binds a HLA/peptide complex, or (1); (16) an isolated  
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
CC and (17) inducing an immune response on a subject having a disorder  
CC characterised by the presence of the HLA molecule and the peptide. (1)  
CC has cytostatic activity, and can be used in gene therapy. The peptides,  
CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
CC useful for treating a subject with a disorder characterised by the  
CC presence of complexes of an HLA molecule and the peptide, and for  
CC inducing an immune response. The present sequence represents a human NY-  
CC ESO-1 peptide, which is used in the exemplification of the present  
CC invention. NY-ESO-1 is an immunogenic tumour antigen.

XX Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADD35552 (1-9)

QY 330 GCCATGCCCTTTGGCGACACCCATGGA 356

Db 1 AlaMetProPheAlaThrPrometGlu 9

RESULT 489  
ADD35558  
ID ADD35558 standard; peptide; 9 AA.

XX  
AC ADD35558;

XX  
DT 15-JAN-2004 (first entry)

XX  
DE Human NY-ESO-1 peptide SEQ ID NO:8.

XX human leukocyte antigen; HLA; cytolytic T cell stimulator;  
XX immune response; cytostatic; gene therapy; human; NY-ESO-1;  
XX immunogenic tumour antigen.

XX  
OS Homo sapiens.

XX  
PN WO2003068800-A2.

XX  
PD 21-AUG-2003.

XX  
PF 12-FEB-2003; 2003WO-US004182.

XX  
PR 13-FEB-2002; 2002US-0355828P.

XX  
PA (LUDW-) LUDWIG INST CANCER RES.

XX  
PI Jager E, Knuth A, Old L, Gnjatic S;

XX  
DR WPI; 2003-902684/82.

XX  
PT New isolated peptide that binds to an HLA molecule, useful for treating a  
PT subject with a disorder characterized by the presence of complexes of an  
PT HLA molecule and the peptide, e.g. cancer, and for inducing immune  
PT response.

PS Claim 14; SEQ ID NO 8; 73bp; English.

XX  
XX The present invention describes an isolated peptide (1) consisting of 8-  
CC 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-  
CC B35 or an HLA-B51 molecule, and stimulates cytolytic T cells specific for  
CC complexes of the peptide and the HLA molecule, where at least 8  
CC contiguous amino acids of the peptide consist of at least 8 contiguous  
CC amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also  
CC described: (1) a composition comprising (1) and a carrier; (2) an  
CC isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an  
CC expression vector comprising the nucleic acid of (2) in operable linkage  
CC with a promoter; (4) a host cell transformed with the nucleic acid of (2)  
CC or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)  
CC specific for a complex of the HLA molecule and (1); (6) detecting the CTL  
CC of (5); (7) a polypeptide comprising at least two of (1) that are linked  
CC together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an  
CC isolated tetramer comprising the HLA molecule, biotin and a binding  
CC partner; (10) a composition comprising the tetramer and a carrier; (11)  
CC inducing an immune response in a subject; (12) treating a subject with a  
CC disorder characterised by the presence of complexes of an HLA molecule  
CC and the peptide; (13) a combinatorial library of derivatives of (1),  
CC where the derivatives consist of 8-11 amino acids; (14) a screening assay  
CC for an analogue of (1); (15) an isolated antibody or its fragment that  
CC specifically binds a HLA/peptide complex, or (1); (16) an isolated  
CC soluble T cell receptor that specifically binds to a HLA/peptide complex;  
CC and (17) inducing an immune response on a subject having a disorder  
CC characterised by the presence of the HLA molecule and the peptide. (1)  
CC has cytostatic activity, and can be used in gene therapy. The peptides,  
CC nucleic acid molecules, vectors, compositions, antibodies and methods are  
CC useful for treating a subject with a disorder characterised by the  
CC presence of complexes of an HLA molecule and the peptide, and for  
CC inducing an immune response. The present sequence represents a human NY-  
CC ESO-1 peptide, which is used in the exemplification of the present  
CC invention. NY-ESO-1 is an immunogenic tumour antigen.

XX Sequence 9 AA;

Alignment Scores:  
Pred. No.: 816 Length: 9  
Score: 9.00 Matches: 9  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 5.00% Indels: 0  
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x ADD35558 (1-9)

QY 327 CTCGCCATGCCCTTTGGCGACACCCATG 353

Db 1 LeuAlaMetProPheAlaThrPromet 9

RESULT 490  
ADD35560

ID ADD35560 standard; peptide; 9 AA.

XX  
AC ADD35560;

XX  
DT 15-JAN-2004 (first entry)

XX  
DE Human NY-ESO-1 peptide SEQ ID NO:10.

XX human leukocyte antigen; HLA; cytolytic T cell stimulator;  
XX immune response; cytostatic; gene therapy; human; NY-ESO-1;  
XX immunogenic tumour antigen.

XX  
OS Homo sapiens.

XX  
PN WO2003068800-A2.

XX  
PD 21-AUG-2003.

XX  
PF 12-FEB-2003; 2003WO-US004182.

|  |   |
|--|---|
| XX                                       | 13-FEB-2002; 2002US-0355828P.   |
| XX                                       | (LUDM-) LUDWIG INST CANCER RES.   |
| XX                                       | Jager E, Knuth A, Old L, Gnjatich S;  |
| XX                                       | WPI; 2003-902684/82.  |
| DR                                       |   |
| XX                                       |   |
| PT                                       | New isolated peptide that binds to an HLA molecule, useful for treating a   |
| PT                                       | subject with a disorder characterized by the presence of complexes of an    |
| PT                                       | HLA molecule and the peptide, e.g. cancer, and for inducing immune          |
| PT                                       | response.   |
| PS                                       | Example 8; SEQ ID NO 10; 73pp; English.                                     |
| XX                                       |   |
| CC                                       | The present invention describes an isolated peptide (1) consisting of 8-    |
| CC                                       | 11, which binds to a human leukocyte (HLA) molecule, e.g. an HLA-A3, HLA-   |
| CC                                       | B35 or an HLA-B81 molecule, and stimulates cytolytic T cells specific for   |
| CC                                       | complexes of the peptide and the HLA molecule, where at least 8 contiguous  |
| CC                                       | contiguous amino acids of the peptide consist of at least 8 contiguous      |
| CC                                       | amino acid sequence of p94-102, p93-101, p108-116 or p91-99. Also           |
| CC                                       | described: (1) a composition comprising (1) and a carrier; (2) an           |
| CC                                       | isolated nucleic acid molecule encoding (1) or the polypeptide; (3) an      |
| CC                                       | expression vector comprising the nucleic acid of (2) in operable linkage    |
| CC                                       | with a promoter; (4) a host cell transformed with the nucleic acid of (2)   |
| CC                                       | or the expression vector of (3); (5) an isolated cytolytic T-cell (CTL)     |
| CC                                       | specific for a complex of the HLA molecule and (1); (6) detecting the CTL   |
| CC                                       | of (5); (7) a polypeptide comprising at least two of (1) that are linked    |
| CC                                       | together; (8) an isolated nucleic acid that encodes the polypeptide; (9) an |
| CC                                       | isolated tetramer comprising the HLA molecule, biotin and a binding         |
| CC                                       | partner; (10) a composition comprising the tetramer and a carrier; (11)     |
| CC                                       | inducing an immune response in a subject; (12) treating a subject with a    |
| CC                                       | disorder characterized by the presence of complexes of an HLA molecule      |
| CC                                       | and the peptide; (13) a combinatorial library of derivatives of (1),        |
| CC                                       | where the derivatives consist of 8-11 amino acids; (14) a screening assay   |
| CC                                       | for an analogue of (1); (15) an isolated antibody or its fragment that      |
| CC                                       | specifically binds a HLA/peptide complex, or (1); (16) an isolated          |
| CC                                       | soluble T cell receptor that specifically binds to a HLA/peptide complex;   |
| CC                                       | and (17) inducing an immune response on a subject having a disorder         |
| CC                                       | characterised by the presence of the HLA molecule and the peptide. (1)      |
| CC                                       | has cytotoxic activity, and can be used in gene therapy. The peptides,      |
| CC                                       | nucleic acid molecules, vectors, compositions, antibodies and methods are   |
| CC                                       | useful for treating a subject with a disorder characterised by the          |
| CC                                       | presence of complexes of an HLA molecule and the peptide, and for           |
| CC                                       | inducing an immune response. The present sequence represents a human NY-    |
| CC                                       | ESO-1 peptide, which is used in the exemplification of the present          |
| CC                                       | invention. NY-ESO-1 is an immunogenic tumour antigen.                       |
| XX                                       |   |
| XX                                       | Sequence 9 AA;  |
| SQ                                       |   |
| Alignment Scores:                        |   |
| Pred. No.:                               | 816   |
| Score:                                   | 9.00  |
| Percent Similarity:                      | 100.00%   |
| Best Local Similarity:                   | 100.00%   |
| Query Match:                             | 5.00%   |
| DB:                                      | 1   |
| US-10-023-182-1 (1-752) x ADD35560 (1-9) |   |
| QY                                       | 522 TCCTGTGATGATGCATCAGCAGTGC 548   |
| Db                                       | 1 SerLeuLeuMetTrpIleThrGlnCys 9   |
| RESULT 491                               |   |
| ADD35551                                 |   |
| ID                                       | ADD35551 etandard; peptide; 9 AA.   |
| XX                                       | ADD35551;   |
| XX                                       | 15-JAN-2004 (first entry)   |
| XX                                       | Human NY-ESO-1 peptide SEQ ID NO:1.   |
| DE                                       |   |

```

QY      333 ATGCTTTGGCAGACCCATGAGACA 359
Db      |||||
        1 MetPropehA1aThrPrometG1a1a 9

RESULT 492
AAU85104
ID      AAU85104 standard; peptide; 30 AA.
XX
AC      AAU85104;
XX
DT      08-MAY-2002 (first entry)
XX
DE      Human NYNSO1a segment 3.
XX
KW      Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW      viral infection; human immunodeficiency virus; melanoma;
KW      bacterial infection; Salmonella; Legionella; parasitic infection;
KW      Trypanosoma; Toxoplasma; Giardia.
XX
OS      Homo sapiens.
XX
PN      WO200190197-A1.
XX
PD      29-NOV-2001.
XX
PF      25-MAY-2001; 2001WO-AU000622.
XX
PR      26-MAY-2000; 2000AU-00007761.
XX
PA      (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI      Thomson SA; Ramshaw IA;
XX
DR      WPI; 2002-147575/19.
XX
DR      N-PSDB; ABK36924.
XX
PT      New synthetic polypeptides having several different segments of at least
PT      one parent polypeptide linked together differently compared to the
PT      linkage in the parent polypeptide, for inducing immune response against a
PT      pathogen or cancer.
XX
PS      Example 3; Fig 27; 364pp; English.
XX
XX      The invention relates to a new synthetic polypeptide (I) comprising
CC      several different segments of at least one parent polypeptide linked
CC      together in a different relationship relative to their linkage in the
CC      parent polypeptide to impede, abrogate or otherwise alter at least one
CC      function associated with the parent polypeptide and for inducing an
CC      immune response against a pathogen or cancer. Also included are a
CC      synthetic polynucleotide encoding and a computer system for designing the
CC      synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC      are referred to as a Savine. The synthetic polypeptide is useful for
CC      modulating immune responses preferably directed against a pathogen or a
CC      cancer. (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC      and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC      oesophagus, brain, testicle, uterus), as potentiating agents.
CC      Compositions comprising the polypeptide may be used in the treatment or
CC      prophylaxis against viral (such as infections caused by HIV (human
CC      immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC      virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC      (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC      Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC      (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,
CC      Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is
CC      a peptide derived from a parent protein used to construct a savine of the
CC      invention
XX
SQ      Sequence 30 AA;
XX
Alignment Scores:
Pred. No.: 235 length: 30
Score: 9.00 Matches: 9
Percent Similarity: 37.50% Conservative: 0

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Best Local Similarity: 37.50% Mismatches: 15
Query Match: 5.06% Indels: 0
DB: 1 Gaps: 0

US-10-023-182-1 (1-752) x AAU85104 (1-30)

QY      220 GGGCCCGAGGCGCTTGCGCCCGCGCGGAGACTTGCCTCCCGCGGACCCGCC 161
Db      |||||
        5 GlyProGlyG1ua1aG1a1aThrG1yG1yArgG1yProArgG1yA1aG1a1aA1aArg 24
QY      160 TCTCCTGGGCGG 149
Db      |||||
        25 AlaSerGlyPro 28

RESULT 493
AAU85116
ID      AAU85116 standard; peptide; 30 AA.
XX
AC      AAU85116;
XX
DT      08-MAY-2002 (first entry)
XX
DE      Human NYNSO1b segment 3.
XX
KW      Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;
KW      viral infection; human immunodeficiency virus; melanoma;
KW      bacterial infection; Salmonella; Legionella; parasitic infection;
KW      Trypanosoma; Toxoplasma; Giardia.
XX
OS      Homo sapiens.
XX
PN      WO200190197-A1.
XX
PD      29-NOV-2001.
XX
PF      25-MAY-2001; 2001WO-AU000622.
XX
PR      26-MAY-2000; 2000AU-00007761.
XX
PA      (AUSU ) UNIV AUSTRALIAN NAT.
XX
PI      Thomson SA; Ramshaw IA;
XX
DR      WPI; 2002-147575/19.
XX
DR      N-PSDB; ABK36936.
XX
PT      New synthetic polypeptides having several different segments of at least
PT      one parent polypeptide linked together differently compared to the
PT      linkage in the parent polypeptide, for inducing immune response against a
PT      pathogen or cancer.
XX
PS      Example 3; Fig 27; 364pp; English.
XX
XX      The invention relates to a new synthetic polypeptide (I) comprising
CC      several different segments of at least one parent polypeptide linked
CC      together in a different relationship relative to their linkage in the
CC      parent polypeptide to impede, abrogate or otherwise alter at least one
CC      function associated with the parent polypeptide and for inducing an
CC      immune response against a pathogen or cancer. Also included are a
CC      synthetic polynucleotide encoding and a computer system for designing the
CC      synthetic polypeptides. The synthetic polypeptides and polynucleotides
CC      are referred to as a Savine. The synthetic polypeptide is useful for
CC      modulating immune responses preferably directed against a pathogen or a
CC      cancer. (e.g., cancers of the lung, breast, ovary, cervix, colon, head
CC      and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,
CC      oesophagus, brain, testicle, uterus), as potentiating agents.
CC      Compositions comprising the polypeptide may be used in the treatment or
CC      prophylaxis against viral (such as infections caused by HIV (human
CC      immunodeficiency virus), hepatitis, influenza, Japanese encephalitis
CC      virus, Epstein-Barr virus and respiratory syncytial virus), bacterial
CC      (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,
CC      Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic
CC      (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,

```

|   |   |
|---|---|
| CC  | Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is  |
| CC  | a peptide derived from a parent protein used to construct a savine of the   |
| XX  | invention   |
| SQ  | Sequence 30 AA;   |
| Alignment Scores:   |   |
| Pred. No.:  | 235   |
| Score:  | 9.00  |
| Percent Similarity:   | 33.33%  |
| Best Local Similarity:  | 33.33%  |
| Query Match:  | 5.06%   |
| DB:   | 1   |
|   | Gaps: 0   |
| US-10-023-182-1 (1-752) x AUAU5116 (1-30)   |   |
| QY  | 298 CCCCCTGCGCCCCGCATGTGAGCATTCACGCCCTGAAGCGCGCGCATTGGCACCC 239   |
| Dd  | 4 PGGIYAIAcInclngInclnglPfoarGlYatrgtlnJuaLAfProarGlYalArg 23   |
| QY  | 238 CGCGGGCGCGCTTCTCCCGGC 218   |
| Dd  | 24 MetAlaAlayrleugInglngly 30   |
| RESULT 494  |   |
| AUAU5115  | standard; peptide; 30 AA.   |
| AAU5115;  |   |
| DT  | 08-MAY-2002 (first entry)   |
| DE  | Human NYN5O1b segment 2.  |
| KW  | Savine; vaccine; cancer; viral infection; HIV; hepatitis C virus;   |
| KM  | viral infection; human immunodeficiency virus; melanoma;  |
| KM  | bacterial infection; Salmonella; Legionella; parasitic infection;   |
| KX  | Tyranosoma; Toxoplasma; Giardia.  |
| OS  | Homo sapiens.   |
| PN  | WO200190197-A1.   |
| PD  | 29-NOV-2001.  |
| PF  | 25-MAY-2001; 2001WO-AU000622.   |
| PR  | 26-MAY-2000; 2000AU-00007761.   |
| PA  | (AUSU ) UNIT AUSTRALIAN NAT.  |
| PI  | Thomson SA, Ramshaw IA;   |
| PT  | WIPI, 2002-147575/19.   |
| N-PSDB; ABK36935.   |   |
| PT  | New synthetic polypeptides having several different segments of at least one parent polypeptide linked together differently compared to the linkage in the parent polypeptide, for inducing immune response against a pathogen or cancer. |
| Example 3; Fig 27; 364tp; English.  |   |
| The invention relates to a new synthetic polypeptide (I) comprising several different segments of at least one parent polypeptide linked together in a different relationship relative to their linkage in the parent polypeptide to impede, abrogate or otherwise alter at least one function associated with the parent polypeptide and for inducing an immune response against a pathogen or cancer. Also included are a synthetic polynucleotide encoding and a computer system for designing the synthetic polypeptides. The synthetic polypeptides and polynucleotides are referred to as a Savine. The synthetic polypeptide is useful for modulating immune responses preferably directed against a pathogen or a |   |

|    |  |
|----|--|
| CC | cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head     |
| CC | and neck, pancreas, prostate, stomach, bladder, kidney, bone liver,        |
| CC | oesophagus, brain, testicle, uterus), as potentiating agents.              |
| CC | Compositions comprising the polypeptide may be used in the treatment or    |
| CC | prophylaxis against viral (such as infections caused by HIV (human         |
| CC | immunodeficiency virus), hepatitis, influenza, Japanese encephalitis       |
| CC | virus, Epstein-Barr virus and respiratory syncytial virus), bacterial      |
| CC | (e.g., infections caused by Neisseria, Meningococcal, Haemophilus,         |
| CC | Salmonella, Streptococcal, Legionella and Mycobacterium or parasitic       |
| CC | (e.g., infections caused by Plasmodium, Schistosoma, Leishmania,           |
| CC | Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is   |
| CC | invention derived from a parent protein used to construct a vaccine of the |
| XX |  |
| XX | Sequence 30 AA;  |
| XX |  |
| XX | Alignment Scores:  |
| XX | Pred. No.: 235 Length: 30  |
| XX | Score: 9.00 Matches: 9   |
| XX | Percent Similarity: 42.86% Conservative: 0                                 |
| XX | Best Local Similarity: 42.86% Mismatches: 12                               |
| XX | Query Match: 5.06% Indels: 0   |
| XX | DB: 1 Gaps: 0  |
| XX |  |
| XX | US-10-023-182-1 (1-752) x AA085115 (1-30)                                  |
| OY | 519 GCTGCTGAGACAGACGAGCTGATGAGAGCTGCAGTTCGACAGTCACTCAGTC 466               |
| DB | 6 AAlAlAGlAGlAlArGrArGrValPrArGrAlAlAlAGlValPrGrGlAlAlAGlAGlGlnGln 25      |
| OY | 459 GGA 457  |
| DB | 26 Gly 26  |
| XX |  |
| XX | RESULT 495   |
| XX | AA06067  |
| XX | ID AA06067 standard; peptide; 8 AA.  |
| XX | AC   |
| XX | AA06067;   |
| XX |  |
| XX | 16-AUG-1999 (first entry)  |
| XX |  |
| XX | Human cancer antigen NY ESO-1/CAG-3 peptide.                               |
| XX |  |
| XX | NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human;           |
| KW | Leukemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer;           |
| KW | metastasis; melanoma; adenocarcinoma; thymoma; colon cancer;               |
| KW | uterine cancer; breast cancer; prostate cancer; ovarian cancer;            |
| KW | cervical cancer; bladder cancer; kidney cancer; pancreatic cancer;         |
| KW | liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;          |
| KW | vaccine; cytotoxic T lymphocyte; CTL.                                      |
| XX |  |
| OS | Homo sapiens.  |
| XX |  |
| XX | MO9918206-A2.  |
| XX |  |
| XX | 15-APR-1999.   |
| XX |  |
| XX | 21-SEP-1998; 98WO-US019609.  |
| XX |  |
| XX | 08-OCT-1997; 97US-0061428P.  |
| XX |  |
| XX | (USSH ) US DEPT HEALTH & HUMAN SERVICES.                                   |
| XX |  |
| XX | Wang RF, Rosenberg SH;   |
| XX |  |
| XX | WPI; 1999-277270/23.   |
| XX |  |
| XX | Cancer antigen NY ESO1/CAG-3.  |
| XX |  |
| XX | Example 11, Page 50; 88pp; English.  |
| XX |  |
| XX | This peptide corresponds to amino acid residues 55-62 of human NY ESO-     |
| XX |  |

CC 1/CAG-3 ORF1 (see AAY05965), a new and potent tumour antigen that is  
CC capable of eliciting an antigen specific immune response by T cells.  
CC Cancer peptides (see AAY05967-87) derived from CAG-3, portions of CAG-3  
CC and their variants, are useful as cancer vaccines. A claimed method of  
CC preventing or inhibiting cancer involves administering a cancer peptide,  
CC with or without an HLA molecule. The cancer peptides form part of, or are  
CC derived from, cancers such as primary or metastatic melanoma, thymoma,  
CC lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,  
CC cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such  
CC as breast, prostate, ovarian, pancreatic and thyroid cancers  
XX  
SQ Sequence 8 AA:  
XX  
Alignment Scores:  
Pred. No.: 918 Length: 8  
Score: 8.00 Matches: 8  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 4.44% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x AAY06067 (1-8)  
QY 216 GGCGCGGAGAGGCGCGCGG 239  
ABP74296  
Db 1 GlyProGlyGlyGlyAlaProArg 8  
RESULT 496  
ABP74296  
ID ABP74296 standard; peptide; 8 AA.  
XX  
AC ABP74296;  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:180.  
XX  
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KM T cell.  
XX  
OS Homo sapiens.  
XX  
PN WO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
XX WPI, 2003-067518/06.  
XX  
XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
PS Claim 1; Page 18; 352pp; English.  
XX  
XX The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is

CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74126 to  
CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX  
SQ Sequence 8 AA:  
XX  
Alignment Scores:  
Pred. No.: 918 Length: 8  
Score: 8.00 Matches: 8  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 4.44% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74296 (1-8)  
QY 399 CTTCCCGTGCAGGCGGCTTCTG 422  
ABP74300  
Db 1 LeuProVal1ProGlyVal1LeuLeu 8  
RESULT 497  
ABP74300  
ID ABP74300 standard; peptide; 8 AA.  
XX  
AC ABP74300;  
XX  
DT 03-FEB-2003 (first entry)  
XX  
DE Human NY-ESO-1 epitope SEQ ID NO:184.  
XX  
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;  
KM T cell.  
XX  
OS Homo sapiens.  
XX  
PN WO200281646-A2.  
XX  
PD 17-OCT-2002.  
XX  
PF 04-APR-2002; 2002WO-US011101.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTL IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
XX  
XX WPI, 2003-067518/06.  
XX  
XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid  
PT encoding the peptides, that are useful epitopes of target-associated  
PT antigens.  
XX  
PS Claim 1; Page 18; 352pp; English.  
XX  
XX The present invention describes an isolated epitope (I) and an epitope  
CC cluster. Also described is a vaccine or immunotherapeutic composition  
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for  
CC treating an animal, by administering to an animal the vaccine or  
CC immunotherapeutic composition. VC is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic composition, by  
CC administering VC to an HLA-transgenic animal and evaluating  
CC immunogenicity based on a characteristic of the animal, or by in vitro  
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is  
CC useful for determining specific T cell frequency, by contacting T cells  
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,  
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or  
CC polymerase chain reaction (PCR). AB083843 to AB083858 and ABP74126 to



CC ABP74713 represent sequences used in the exemplification of the present  
CC invention  
XX  
SQ Sequence 8 AA;  
Alignment Scores:  
Pred. No.: 918 Length: 8  
Score: 8.00 Matches: 8  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 4.44% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ABP74300 (1-8)  
Qy 399 CTTCGGTGCAGGGGCTTCTG 422  
Db 1 LeuProValProGlyValLeuLeu 8  
RESULT 498  
ADC09155  
ID ADC09155 standard; peptide; 8 AA.  
XX  
AC ADC09155;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 180.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTLI IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
PI WPI; 2003-248010/24.  
XX  
DR  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 180; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
SQ Sequence 8 AA;

Alignment Scores:  
Pred. No.: 918 Length: 8  
Score: 8.00 Matches: 8  
Percent Similarity: 100.00% Conservative: 0  
Best Local Similarity: 100.00% Mismatches: 0  
Query Match: 4.44% Indels: 0  
DB: 1 Gaps: 0  
US-10-023-182-1 (1-752) x ADC09155 (1-8)  
Qy 399 CTTCGGTGCAGGGGCTTCTG 422  
Db 1 LeuProValProGlyValLeuLeu 8  
RESULT 499  
ADC09159  
ID ADC09159 standard; peptide; 8 AA.  
XX  
AC ADC09159;  
XX  
DT 18-DEC-2003 (first entry)  
XX  
DE Epitope with high affinity for MHC class I #SEQ ID 184.  
XX  
KW Epitope; immunological; vaccine;  
KW major histocompatibility complex class I; MHC class I; cancer;  
KW immunisation.  
XX  
OS Unidentified.  
XX  
PN WO2003008537-A2.  
XX  
PD 30-JAN-2003.  
XX  
PF 29-MAR-2002; 2002WO-US010189.  
XX  
PR 06-APR-2001; 2001US-0282211P.  
PR 07-NOV-2001; 2001US-0337017P.  
PR 07-MAR-2002; 2002US-0363210P.  
XX  
PA (CTLI-) CTLI IMMUNOTHERAPIES CORP.  
XX  
PI Simard JTL, Diamond DC, Liu L, Xie Z;  
PI WPI; 2003-248010/24.  
XX  
DR  
XX  
PT Epitope having high affinity for major histocompatibility complex class I  
PT useful for treating an animal, evaluating immunogenicity of a vaccine or  
PT therapeutic composition and for diagnosing a disease.  
XX  
PS Claim 1; SEQ ID NO 184; 239pp; English.  
XX  
CC The invention relates to an isolated epitope polypeptide that has high  
CC affinity for major histocompatibility complex (MHC) class I, and an  
CC epitope cluster comprising the polypeptide. Also disclosed is a vaccine  
CC or immunotherapeutic composition containing an epitope of the invention.  
CC Compositions of the invention may be used in the treatment of cancer. The  
CC method can be combined with a radiation therapy, chemotherapy,  
CC biochemotherapy or surgery. The composition is also useful for evaluating  
CC immunogenicity of a vaccine or immunotherapeutic compound. Multimeric MHC  
CC-peptide complexes of the invention are useful for determining specific T  
CC cell frequency. This method is useful for evaluating immunological  
CC response, by performing the method prior to and subsequent to an  
CC immunisation step. Compositions of the invention are useful for  
CC diagnosing a disease. The current sequence represents an epitope of the  
CC invention with high affinity for MHC class I.  
SQ Sequence 8 AA;  
Alignment Scores:  
Pred. No.: 918 Length: 8  
Score: 8.00 Matches: 8

Percent Similarity: 100.00%  
Best Local Similarity: 100.00%  
Query Match: 4.44%  
DB: 1  
Conservative: 0  
Mismatches: 0  
Indels: 0  
Gaps: 0

US-10-023-182-1 (1-752) x ADC09159 (1-8)

Qy 399 CTTCGGTGCCAGGGGTGCTCTG 422  
|||||  
Db 1 LeuProValProGlyValLeuLeu 8

Search completed: July 21, 2004, 11:00:10  
Job time : 9.5 secs